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THE PAPER TRADE JOURNAL.

"The Consumption of Paper is the Measure of a People's Culture."

VOLUME XXIII.—NO. 25. NEW YORK, JUNE 23, 1894. WHOLE NUMBER 1051.

Trade Topics.

Beating Engine.

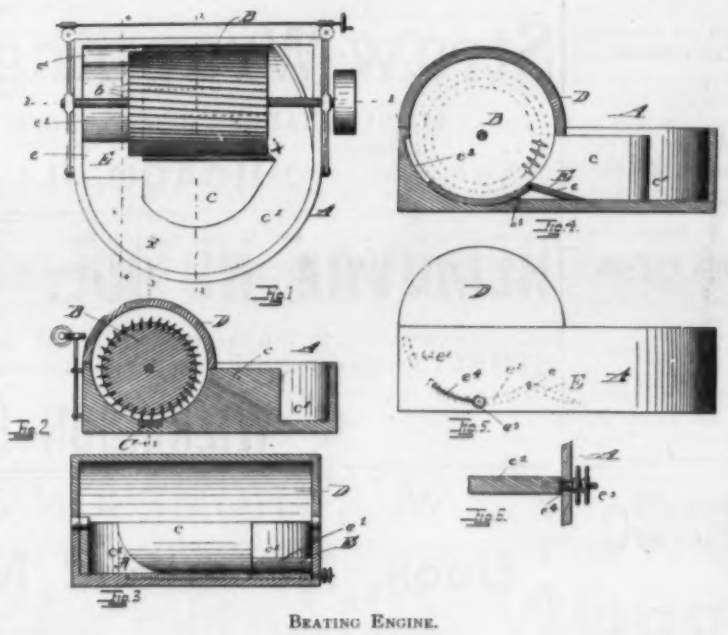
The illustrations on this page show the design of a new beating engine, Figure 1 being a plan view of the vat and roll taken with the casing normally covering the top removed, the figure therefore showing the conformation of the channel; Fig. 2 is a vertical section on the line 2—2, Fig. 1, showing the vat, the roll and the bed knives; Fig. 3 is also a vertical section on the line 3—3, Figs. 1 and 2, through the vat, showing its interior construction; Fig. 4 is a section on the line 4—4 of Fig. 1; Fig. 5 is a side elevation, and Fig. 6 is a detail of the segment securing stud and thumb nuts.

A is the vat, B is the roll and C is the set of bed knives. The knives b are set spirally, as shown in Fig. 1, but are otherwise of the usual form. The bed knives C are of usual form and are set, as is also usual, parallel to the axis of the cylinder and in the bottom of the concave. The concave has a casing, D, over it of semicircular form, which completes the circle partially formed by the concave in which the roll runs. As usual, the roll runs in the stuff nearly to its axis, and consequently the mid-block c is about as high as the sides of the vat and the axis, and in connection with the sides and bottom of the vat forms a channel, c', from one end of the cylinder around to the other.

The impingement of the spirally set knives against the stuff tends to drive it forward and in the direction of the arrow x in Fig. 1, and to force it finally around the channel c' to the other end of the roll. The spiral knives make an angle with the bed knives, causing a shearing cut on the stuff.

The dam E is inserted in the channel c' so as to receive the stuff from the roll and cause positive circulation, and hence its point of greatest altitude should be as near the periphery of the roll as practicable in operation. This dam is formed of a plate e which fits the lower portion of the channel c' resting at its lower or free end on the floor thereof, and its upper end being pivotally secured to the end of the segment e' which fits and is movable in a correlatively shaped recess or depression e^2 in the concave, as best shown in Fig. 4, being held stationary by means of a thumb nut and stud, e^3, which passes through a curved slot, e^4, in the casing, as seen in Figs. 5 and 6. The fit of the segment e' in its seat should be such as will preclude any possibility of objectionable leakage around it. The segment will at all times hold the plate e rigid and as near to the circumference of the roll as practicable. The plate e may be longer if desired to have it extend farther into the channel and lessen its inclination.

Referring to Fig. 3, the opening in which the roll runs is eccentric to the roll, which leaves considerable space at the top of the opening above the roll, which will cause the stuff to be thrown by centrifugal force over the top of the roll at an angle to the direction of revolution of the roll by the spirally set knives, and it will be thrown forward as the stuff tends and against the inner side of the casing at the top, thereby thoroughly intermixing the stock and more thoroughly pulping it.



Beating Engine.

The Contract of Employment.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

The contract of employment is one of the most common in business transactions, and the one about which there is, as a rule, the least proportion of litigation. However, there are some technical rights and obligations which the law imposes and which are not always thoroughly understood. For this reason, although the subject may be somewhat trite, it is one to which any business man may profitably turn his attention once in a while.

The ordinary contract of employment, as that term is understood in business circles, is purely a matter of agreement between the parties. Our law does not as a rule recognize the old common law apprenticeship, in which the contract on the part of the apprentice was made neither by him nor usually for his benefit. A parent, however, in this country is entitled in most States to the earnings of his minor children, although that right exists only as between the parent and the child, and not as between the parent and the employer of the child. That is, the parent may lawfully take the earnings of a minor child away from it, and upon giving notice of such claim in advance may take them from the employer. In the absence of such notice payment to the minor is a discharge of the employer's liability. If, however, notice is given to the employer that such wages will be claimed by the parent the employer is liable to the parent, although he has paid the employee.

Aside from this exception in the employment of minors the contract of employment is wholly between the parties to it. As a rule it is a specific as distinguished from an implied contract, although there may be cases in which this relation is created by implication. Practically speaking it is a specific contract in which the details are agreed upon. It may be either written or oral, as the law makes no distinction between these two kinds of contracts, except as they are affected by the statute of frauds. Under that statute a contract of employment, like any other which by its terms is not to be performed within one year, must be in writing to be valid. The distinction that "by its terms it is not to be performed within one year" must be borne in mind. For instance, an agreement to employ a man for five years is clearly by its terms not to be performed within one year; but a contract to employ a man to superintend the construction of a building until its completion, although it may have been well known to all the parties that it would be for more than a year, does not disclose that fact by its terms. The first must be in writing; the second need not be. With this exception, the only difference between a verbal and a written contract goes to the question of proof and not validity.

If the contract is in writing when its execution and authenticity have been proved, it is evidence of the matters expressed in it; if it is verbal it must be proved in detail by a preponderance of evidence on the part of the person seeking to enforce it. In seeking to discharge an employee who is without fault under the contract, where the term for which it was to run was not clearly agreed upon, a question arises as to when and upon what notice it may be terminated. If the contract was entered into for a specific term, of course it terminates upon the expiration of that term. If it was not made for a specified period the law implies that the measure of wages is the measure of time. If the pay is determined by the day the contract is from day to day; if the pay is measured by the week the contract runs from week to week; and so if the pay is monthly or yearly that is the implied period of the contract, and the burden is on the employer to show affirmatively that it was otherwise agreed.

It matters not how the payments are made; the question is by what quantity of time they are measured. That is, if the salary agreed upon be $100 a month the payment of $25 per week in four week months will not establish a weekly hiring, and if the agreement be for $1,200 a year the payment of $100 monthly will not establish a monthly contract. In the absence of other agreements the measure of pay is the measure of employment; but if a further agreement is made as to duration then the measure of pay has no effect in determining the length of the contract. That is, if an agreement is made at $100 a month for one year the fact that the pay is measured by months does not make it a monthly contract.

When a valid contract has been made, either party may recover such damages as he sustains by reason of a breach on the part of the other. This is as much true as against the employee, if he leaves before the time of service expires, as it is against the employer for wrongful discharge. While these fundamental principles of this very common contract are so well known that it might seem needless to reiterate them, the cases which are litigated in the courts would seem to indicate that they are so well known in many cases as to be overlooked, and it may therefore be of value to some to bring them again to mind.

The Centrifugal Pump.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By W. H. Weston.

As a means of handling large volumes of water economically and easily at moderate lifts, there is nothing equal to the centrifugal pump, under ordinary circumstances, and especially in handling dirty water or that which holds sand and mud, sticks, &c., where excavations are going on, or in case of flooding of any work; also in pumping large quantities of water which are perfectly clear and clean the centrifugal pump can be used with much more satisfactory results than the common form of pump, and might replace the latter in many places with marked economy, not only in construction work but in the permanent running of a mill or a manufacturing business of any sort.

The value of this pump in handling water has long been admitted in marine engineering, and it should be taken advantage of to a greater extent in stationary work and land purposes than has ever been done. No doubt there are places where the centrifugal pump has been used in which it was not a success because it was not a proper form of pump for the work to be done; but there are a great many positions where it is not used, in which it might be employed with much more satisfactory and economical results than any other form of pump which is built at the present time.

The selection of a pump for any given position requires as good and careful judgment as in selecting any other part of an equipment, although it is seldom considered of as much importance as economy would require if properly taken into account. For purposes for which it is adapted, the centrifugal pump is by far the simplest in form and construction to be had at present, and it is doubtless as simple as any that will ever be made in the near future. It may be said to have no wearing parts. The only points of wear are at the journal or stuffing boxes, and this is of so slight account as to be practically of no moment as far as expense is concerned, in comparison with other forms of pump. As there are no reciprocating parts, this pump has a great advantage in the matter of speed and long life. All of its action and movement is positive; there are no centres to pass, nor sticking points. And the absence of all detail or wearing surfaces makes it practically free from deterioration, and when it is old it can pump as much water as when new—something which cannot be said of the common form of pump. The simple detail of the centrifugal pump admits of its being made at a low cost in comparison to the amount of water that it will handle, the cost of repairs under ordinary circumstances being of very little account, and usually nothing at all, unless in exceptional accident where some part may be broken.

As to the running of the pump it probably cannot be denied that the centrifugal will make vastly longer continuous runs than any form of plunger pump ever made, or that can be made. It can be run at its highest capacity without heavy foundations under it, a thing which cannot be done with the reciprocating pump for any length of time, and in case of any temporary work of pumping out pits, &c., it can be placed on a pile of excavated material without any preparation whatever. For any fixed position it is better to place a permanent stone or brick foundation under it, if it is of much size, or if small it can be secured to timbering; at all events the foundation will be smaller and cost less than that required for a common pump of the same capacity. As to the attendance required for its operation it can usually be run with less attention than the reciprocating plunger pump.

In comparison with the amount of water handled, the weight of the centrifugal pump itself is small and it can easily be moved about, as is often necessary on construction work. As to the best method of supplying power to it, whether by a direct connected engine or by belting, that depends on circumstances. Many times it is of advantage to have a separate pump and belt to the fly wheel of a hoisting engine, as it often happens that on work of any size there will be one engine out of use for hoisting at periods when there is water to be pumped, so that it can be employed economically to supply power to run the pump. Under such circumstances the pumping outfit is very cheap and can be used at a small cost. Under other circumstances, where shafting can be used to supply power for a pump which is set in a permanent position, it may be most advisable to connect, being simple and cheap, and requiring no attention to speak of in its operation. Under other conditions where the pump may be used on construction work, where there are no available engines to run it, or in some permanent positions where shafting is not at hand, and the volume of water to be moved is large, the best way is to have an engine coupled direct to the pump. The engine so used should always be of the vertical type, and as compact as possible. On large pumps the engine should have a variable cut-off, if the head of the water to be lifted will vary, as is often the case, especially where pits, &c., are to be pumped out. Steam can usually be taken from any boiler which may be reasonably near. The engine and the pump should always be placed on one foundation casting when possible, even with the very large equipments.

The advantage of the centrifugal pump in many positions where there is a large amount of sand and soft mud in the water is very marked, as these can very often be pumped out in large quantities with the water, a thing which no common plunger pump can do, thus moving them more quickly and much more cheaply than they could be shoveled. An experience which the writer had when he was a boy at pumping out a large volume of water at a certain place in order that spring work might begin, clearly shows the disadvantages under which many plants are run simply for want of proper appliances. The pump in use was one of single pattern of some make seldom heard of. Yet the steam end was all right as to working. The water end was provided with large flap valves which opened about 45°. These could not be got at without taking down the discharge pipe and then removing the top casting onto which it was secured, and the number of bolts used was as large as could be provided without cutting out all of the iron in the flanges by the bolt holes. The bottom of the suction pipe which was down in 10 or 12 feet of water, had no strainer over its end. Steam was supplied from a boiler about 250 feet away.

At the time of taking charge, about half a day was consumed in overhauling the pump to clear the gear of dirt and gum, get the oil cups clear and the pump so that it would start under steam. This done, it worked fairly until about midnight, when there was a commotion and the pump would move 3 or 4 inches about once a minute. then the piping had to be taken down and the valve chamber castings taken off to find a stick about the size of stove wood wedged under one of the valves, besides a handful of stones scattered through various parts, this being the beginning of like occurrences which happened every little while during the pumping, which was kept up night and day for quite a time. About twice the amount of coal was used which would have been required to have pumped the water by a centrifugal pump, and with the latter none of the clogging and stoppages would have occurred, although the water was muddy and sandy.

The Making of News.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By James Hall.

In no class of paper has there been of late years such an extensive and keen competition as in that of news, except it be that of straw wrapping or wrapping in general; and as a matter of course the price has come down by leaps and bounds until now it is barely possible to see a profit in it.

This arises from various causes, the chief of which is that of overproduction, and the overproduction is caused by too many people rushing into this class of trade, stimulated and encouraged, as many of them have been, by the facilities afforded by the use of wood pulp in its various forms of preparation. To make news is the simplest form of paper making—the A B C of the business.

No wonder then that Tom, Dick and Harry, with all of their relations, should be in it; and, being in it, should be the means of bringing down the price to such a low point as to leave little or no profit to the business.

The mill must be kept running, but to do this orders are frequently taken at a loss. A keen competition for certain "standard things" frequently takes place between one mill and another, the consequence of which is that the newspaper proprietor reaps the benefit at the expense of the paper maker.

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This is one of the immediate results of overproduction, and the consequence of which proves very disastrous to the interests of stockholders, who often have to go with very poor dividends, or in some cases, with no dividend at all.

In the erection of a large news mill and filling it with machinery hundreds of thousands of dollars have been expended, and the proprietor, or directorate as the case may be, is anxious to realize a dividend—for it often happens that shutting down means a greater loss than to keep running; but it is impossible to do this owing to the low prices produced by competition. This same keen and cruel competition is more or less felt in all of the lower grades of paper. The lower the grade the keener the competition. This arises from two causes. First, some makers prefer the simpler forms of paper making because of their simplicity; and secondly, that the older mills—some of them having very antiquated machinery—are of necessity compelled to run only those papers to which their mechanism is equal.

In the higher grades competition is less severe. It is not every paper maker who can make them, and certainly every mill is not adapted to them. The result is that these mills are run at a greater profit, with less care and anxiety and infinitely less destruction in the wear and tear of machinery.

To return, however, to the news matter. The question very naturally arises, Is it necessary to have all this worry and anxiety in the making of news, and the making of it at a loss to the stockholders? I think not.

To meet the competition of recent years every device has been resorted to; machines have been worked at their very highest rate of speed, engendering greater wear and tear and a greater number of breakdowns. Wages have been reduced and the cost of furnish so far lessened as to detract from the strength of the paper and its power to stand the racket of the machine.

Something will have to be done to meet the exigencies of this state of things. The "cutting down" process has in many cases been carried to its utmost limits, and yet many mills at the present moment are being worked at a loss, while others are not realizing profits commensurate with the capital involved and the depreciation going on from year to year in their buildings and machinery.

While the paper maker is thus worrying his brain in an attempt to make both ends meet, those for whom he is thus slaving are building up colossal fortunes. Take an illustration to prove this:

There is in the city of New York a newspaper which puts forward its daily circulation at 460,000 copies. The paper on which that newspaper is printed costs 2¼ cents per pound. The sheet is 36½x48, and weight 57 pounds of 500 sheets, or 114 pounds per 1,000 copies. The ordinary morning paper consists of two sheets of eight pages each, which requires 228 pounds of paper for each 1,000 comp'eted papers; and this at 2¼ cents per pound is equal to $5.13 per 1,000. These papers are sold to the public at 2 cents per copy, but to the agents at 1½ cent, which is equal to $15 per 1,000. Deducting $5.13 from this as the cost of the paper, leaves a net profit of $9.87 per 1,000 copies on the sale of paper alone; and this multiplied by 460 (thousand) gives an aggregate profit of $4,540.20 per day. This again multipied by 313, the number of days in the year exclusive of Sundays, gives a total profit of $1,421,082.60.

Then take the Sunday issue. This consists usually of six sheets of eight pages each, equal to forty-eight pages. Each 1,000 sheets will require 684 pounds of paper at a cost of $15.39. The paper sells at 5 cents per copy, and at 4 cents to the agents, making $40 per 1,000 copies; and after deducting $15.39 off for paper, realizes a net profit of $24.61 per 1,000 copies; and 460,000 times this yields a profit on the Sunday issue of $588,671.20. This added to the profit on the other 313 days of the year makes a total profit on sale of paper alone of $2,009,753.80.

Now, I am well aware that in reckoning up their circulation at 460,000 copies daily the said daily paper may, and probably does include its evening edition, which is sold at 1 cent per copy only. This of course will tend to modify the figures above stated, and as I do not wish to exaggerate the figures in any way I will take the morning issue at one-half only that of the total issue, and say 230,000 copies at 2 cents per copy, and 230,000 at 1 cent each. The latter is only an eight paged paper at most, but frequently only six; take it, however, at eight, and, based upon these figures, the total profit on circulation alone will be $1,654,223.20 per annum.

In reading and meditating on these figures it must be borne in mind that this is a profit on circulation of the paper only. Over and beyond all this there are the advertisements, the income from which is enormous. Doubtless the expenses of a daily paper are large; but the income is gigantic, and the profit on the sale of paper alone would probably clear all of the working expenses, leaving the revenue from advertisements as the profit on the business.

Now, there are many paper making industries in this country the aggregate capital of any one of which would far exceed in amount the money necessary to work a daily paper such as the above, and in which the depreciation of plant is probably many times greater than that in a newspaper office; but where is the mill which is today making, say, a tenth part—nay a twentieth part—of the annual percentage of profit on capital invested as that of a newspaper undertaking like the above?

This, be it remembered, is no exceptional case. There are other newspapers in New York whose circulation may not be so large, but whose papers sell at 3 cents per copy, thus aggregating a corresponding profit on the circulation.

These facts speak for themselves, and the lessons they teach are very significant. Why should the paper maker rob himself, as it were, to feed the newspaper? Why should he have to run his machinery to rack and ruin by working night and day, and waste his capital, to enrich another industrial corporation which is more dependent on him than he is on it, if he only could and would try to realize it?

(To be continued.)

Correspondence.

Fox River Valley.

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., June 19, 1894.

The principal interest in this district at present centres in the proposed shut down for two days in the week and its probable effect upon trade conditions, details of which were given in my last letter. I conversed this morning with Col. H. A. Frambach in regard to the matter. He is yet in correspondence with Eastern manufacturers and hopes to secure the ratifying action there without which the movement must be of doubtful success here. He says that he expects that an agreement will be reached this week for closing all the mills here next Saturday. Subsequently it will be determined whether the shut down shall be made for one or two days in the week. As previously stated, business at almost all of the mills here has suffered very little diminution, and all except two or three machines are running full time. Prices are anything but satisfactory, however, and it is expected that such action as is contemplated will have a salutary effect upon the market.

Dr. V. Drewsen, a sulphite manufacturer and expert in sulphite processes, of Christiania, Norway, whose presence in this valley has been previously noticed in these columns, accompanied by N. C. Bonnevie, lately of Dexter, N. Y., departed last night for New York at the close of a profitable visit here. Dr. Drewsen, who arrived in this country in April, is engaged in introducing to American manufacturers his process for greatly economizing in materials and securing larger production in sulphite mills. His process, which was patented in the United States in February of last year, is used well nigh universally in the old country, but has been comparatively unknown in America. Dr. Drewsen has been in no hurry to give information about it to the press, preferring to see manufacturers personally, but has consented to let the trade know what he is doing through THE PAPER TRADE JOURNAL. In brief then, he guarantees, by the use of his process and apparatus, to save 30 per cent. of lime, and 20 per cent. of brimstone, and 10 per cent. of fuel, and to increase the capacity of the mill 25 per cent. In other words, he agrees to save several dollars a ton in making and at the same time make more product. These are large claims, but they seem to be borne out by the recommendations he has from those who are using his system.

Dr. Drewsen's process consists in saving and utilizing the gases escaping from the top of the digestor which would otherwise go to waste. Assisted by Mr. Bonnevie he has put his process in operation at the plant of the Riverside Fibre Company, in this city, and the same has been on trial there for upward of a month. The company has just accepted it, which of course testifies as to its belief. Dr. Drewsen has letters of recommendation from the Geo. H. Friend Paper and Tablet Company, of West Carrollton, Ohio, and from the Remington Paper Company, of Watertown, N. Y., at the last named of which places his invention has been in operation for the past five months. These letters state that his guaranty has been more than fulfilled. The Badger Paper Company, of Kaukauna, is now putting in the necessary apparatus, which will be running in a few days, and Dr. Drewsen is in communication with half a dozen manufacturers in New York whose mills he expects to fit out as soon as he can get to them. The mill of the Marinette and Menominee Paper Company is also on the list for immediate attention. The process was first put in at the plant of the Dexter Sulphite Pulp and Paper Company, of Dexter, N. Y., before the patents were secured in this country, where it has been in operation for two years with most satisfactory results. The invention seems to be one which sulphite makers cannot afford not to look into.

An Eastern machinery man who was in the valley last week talked to local manufacturers about several immense ground wood mills which he said were in prospect in the East, whose construction was little less than fully decided upon. The parties interested, he said, had purchased thousands of acres of land in the Adirondacks, the wood upon which would cost them not to exceed $2 a cord, and they were expecting to reap a harvest at the expense of those who were paying from $6 to $9 a cord for timber, which would justify them in putting up very large plants even in these hard times. Wood near prominent paper making centres is yearly becoming a more scarce and expensive article, and it seems probable that more and more the mills will have to go to the woods rather than the woods be brought to the mills.

Frank A. Leavens, head bookkeeper for the Winnebago Paper Company, of Neenah, was married last Tuesday, Helen Matthews, daughter of the Presbyterian minister at Neenah, being the bride. A reception was given after the ceremony at the home of the bride's parents, after which the young couple departed on an extended bridal tour. Mr. Leavens is a very popular young man in the business and social circles of the valley, and his friends felicitate him heartily upon his happiness.

The foundations for the new boiler house and stack at the Kimberly mill of the Kimberly & Clark Company are completed and the bricklaying has begun. While excavating for the foundation a spring of very pure, cold water was encountered, which is now being used for drinking in the mill.

The body of an unknown man was found in the south race at Neenah last week. It was disfigured beyond recognition and has not been identified. No papermakers are missing, so that the trade will probably not be exercised.

At a race meeting held in this city last week John S. Van Nortwick won the gentlemen's driving race in two straight heats, amid much enthusiasm on the part of his friends.

Del. Brien, employed by the Riverside Fibre Company, has accepted a position with the Ashland Fibre Company.

C. H. Dobilinski, of Philadelphia, spent several days in this valley last week.

W. H. Bucher, of Cincinnati, is in town on one of his periodic visits.

W. W. Heritage, of Philadelphia, made the rounds of the valley last week.

G. A. Bagley, of Watertown, N. Y., made a flying visit to the Fox River region last week.

C. L. Heuser, of Chicago, called on Appleton friends lately.

F. J. McGovern, of East Aurora, N. Y., made a business trip to this district last week.

FOX RIVER.

Miami Valley.

[FROM OUR REGULAR CORRESPONDENT.]

DAYTON, Ohio, June 21, 1894.

The same dullness to the extremes of monotony exists in this valley in the paper manufacturing industry, strictly speaking. Of course the allied trades sympathize in the depression, and this condition of business is thus general. However, the paper novelty dealers report that trade is "picking up a little—just a little," they say. Well, "little drops of water, little grains of sand," &c., and there is some encouragement at least. The coal strike has materially affected the local trade.

The Amanda Manilla Mills, located near Middletown, have been disposed of to the satisfaction of all parties concerned, it is understood. It will be recalled that several unsuccessful attempts were made to sell the plant at public auction, and that the owners were greatly discouraged over the outlook as to its disposal. However, the Lima Straw Board Company sees in it a splendid location and a good plant, and in a private deal has purchased it. A bid was made and promptly accepted, although there was a slight difference as to the value of some

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tools and other property belonging to Dr. Thornton individually. However, the latter made no forceful protestation and the deal was consequently effected. The news of the sale will come as a delicious morsel to the residents of Amanda, as it is understood that work will be resumed at once and the old-time prosperity in the village, which has been absorbed by the prevailing dullness, will once again reign peacefully. About two years ago these mills entered the manilla combination and since the date of the company's disastrous failure have been shut down.

Trustee Thomas M. Boyd, of the Louis Snider's Sons' Company, of Hamilton, has made a plea in the courts for the resumption of the Snider mills, claiming that it will result to the advantage of all concerned. His amended answer to the answer and cross petition of the Market National Bank has been filed. In it he prays that when the Snider properties are sold they shall be disposed of free of any claim or lien held or claimed by the Market National Bank under or by virtue of certain mortgage bonds in its possession as collateral security. The trustee considers it materially to the advantage and interest of the creditors that the operation of the mills shall be continued, and he further says that at present it would be difficult to find a purchaser for the mills who would be willing to pay even a reasonable price. The bank has consented to the operation of the plant and will therefore, it is argued, not bring such action as to interfere in any way or demand that the mills shall be sold to satisfy its claim.

The company borrowed $148,000 and gave its bonds to five different banks, among them the Market National, whose claim originally was $13,086.67, but on February 5, 1894, the trustee paid the institution $3,271.67, being a general dividend of 25 per cent., distributed to all creditors.

H. E. Heap, representing H. G. Craig & Co., of New York, was in the city during the past week.

A. D. Schaeffer, of the Hartford City Paper Company, Hartford City, Ind., called on the trade in the valley this week.

Frank Grubb, of Cady & Grubb, Chicago, looked after business in Dayton for a few days this week.

Colin Gardner, president of the Tytus, Gardner Company, Middletown, boarded a train the other day for Dayton, more to ascertain the difference of atmosphere than anything else.

Frank N. Aull, of the firm of Aull Brothers & Co., paper dealers, is spending several weeks at Chattanooga with his family.

Mr. Jackson, of the Monroe Paper and Manufacturing Company, Monroe, Mich., was a caller this week.

Hon. John Little, identified with the trade at Piqua, was seen at the Beckel the other day with C. W. Fairbanks, the well-known railroad magnate. Their movements were quiet, and if a big deal is "on" it is far from maturity.

From this date on it will be difficult to "keep tab" of the Miami Valley manufacturer. It is getting hot in Ohio, and other climes will be sought. Notwithstanding depression, Daytonians and other trade men of surrounding towns will hie themselves to summer resorts for peace and quiet.

The courts are again teeming with suits and counter suits brought by business adversaries of Charles F. Gunckel, the lately deposed paper king of Middletown. Mr. Gunckel has filed a number himself this week against various parties interested in the recent past in industries which thrived until the fateful year of 1894 clenched prosperity with its clammy fingers and choked the life and vitality out of the growing enterprises. Trustee Todhunter, who handled the affairs of the Middletown Paper Company, the other day found the books kept by the M. & M. railroad manipulated by Mr. Gunckel and others, and the general public was greatly surprised at the result. The discovery precipitated a lively tilt between the several business factions in Butler County.

All of the traveling men of the Dayton Paper Novelty Company are now in Dayton. The trade in Texas, Louisiana and the South has been gratifying.

Judge Giffen, of Hamilton, has handed down the following decisions, which are interesting to the trade:

Samuel Margerum, trustee, *v.* Chas. F. Gunckel. Suit to recover $20,828.01. Decision rendered for plaintiff.

Samuel Margerum *v.* C. F. Gunckel. Suit to recover $3,960.45. Judgment for plaintiff.

Samuel Margerum *v.* C. E. Flenner. Suit to recover $1,363.27. Judgment rendered in favor of the plaintiff.

Several accidents are recorded this week. Adam Putz, an employee of the Rockdale Mills, walked into a doctor's office at Hamilton, and pulling a thumb from one pocket and a dismembered right hand from the other requested that they be "stuck together." The accident was the result of familiarity with a calender. William Rettig, employed at the Gardner mill at Middletown, suffered an injury to his right hand, the little finger of which was badly mashed.

Among the mills which closed the past week were the Eagle at Franklin and the Wrenn at Middletown, the latter indefinitely and the former only temporarily, through a short supply of coal.

A man named Louis L. Bender, typographer, was arrested in this city the other day for forging a check on a liquor firm which bore the signature of the Harding Paper Company, Franklin. It was drawn on the First National Bank and was made payable to W. H. Ward. Although succeeding in passing one he was caught in the second attempt.

The other day the stern wheeler steam craft Blanch Edmundson arrived in the city on a north bound cruise on the Miami and Erie Canal. The boat is an exact model of the Ohio River steamboat Peerless, and is one-sixteenth of the size of the latter. The officers and crew are members of the Pittsburg Yacht Club and the object was to make preliminary surveys with reference to converting the canal into a ship canal, although this survey will not be official. Pittsburg is interested in the project and its representatives continued their journey northward to Toledo. An interview with several of the officers elicited a favorable expression as to the feasibility of the project, but they were unable thus far to exhibit figures of probable expense.

E. B. Weston, of the Weston Paper Company, has returned from Jacksonville. He reports the wife of T. A. Phillips, the widely known paper manufacturer, much improved in health, with prospects of a sea voyage before her.

The Aull Brothers Paper Company has broken ground on West Fifth street, near Perry street, preparatory to the erection of a new five story establishment. This hustling firm of paper dealers consists of W. J., John W. and Frank N. Aull, and is concededly one of the sturdiest in the country. Its business has wonderfully increased during the past two years, and it was found necessary to secure more spacious quarters. With a removal in view it was decided to erect a factory of brick construction. It will be a model in every particular, and will be so arranged that the lower floors may be adapted for business purposes.

A gossipy bit of news is flitting about concerning the transactions relating to two well-known Cincinnati paper concerns, and if it has not been kept *sub rosa* it was not the fault of those directly concerned. It seems that it was the desire of Nicholas Biedinger, of the Biedinger Paper Company, to consolidate with the Seinsheimer Paper Company, and so ardently did he prosecute his own plans that he thought there could be no possible interference; but, so goes the story, there were others interested, and so deftly and cleverly did they play their cards that the consolidation was frustrated. As a result Albert Chatfield was appointed a receiver. The company may pay in full, however, and this legal proceeding followed simply as an interceptor. Nick and his friends yet cherish fond recollections of that banquet they held over their seeming success, but evidently "'twas their own funeral" which they celebrated.

M. V.

Boston.

[FROM OUR REGULAR CORRESPONDENT.]

EASTERN OFFICE PAPER TRADE JOURNAL,
67 FEDERAL STREET,
BOSTON, June 21, 1894.

The paper business continues quiet—very quiet.

So it is likely to continue for several weeks to come.

A long dull summer is just ahead; but to be followed, many seem to think, by good business in the fall. This hope is the encouraging feature of the present unsatisfactory status of the paper trade.

Some manufacturers are just as busy as in booming times, but they are not making as much money because of the low prices prevailing. Overproduction seems to be beyond the power of those interested to properly regulate, much as that end might be desired.

A communication, of which the following is a copy, has been received by paper manufacturers of this city, and possibly by other paper makers of New England:

KAUKAUNA, Wis., June 15, 1894.

At a meeting of the paper manufacturers of the Fox River Valley and the Wisconsin River, held at Neenah, June 11, at which every mill was represented, an executive committee was appointed with power to close down mills for one or two days in each week during July, provided all manufacturers join the movement. I was appointed to confer with the mills not represented, including those of the East, with the view of having them take similar action or join our movement. Kindly advise by return mail your pleasure. May I suggest, if in sympathy with the movement, that you signify your willingness to shut down upon request of the executive committee. This will facilitate matters. You certainly appreciate the importance of some such action. Do not stand out on technicalities, but act at once. Yours truly,

H. A. FRAMBACH.

With the view of learning how the trade look on this proposition I called to-day upon several of the Boston paper manufacturers. While every one seen was perfectly willing to discuss the matter no one desired to have his name published in connection with the views which he expressed. Yes, there was one, the Hon. William Whiting, of Holyoke, whom I met in trade circles to-day. Mr. Whiting stated that owing to absence from his Holyoke office he had not seen the circular letter from the West. He expressed himself favorable to the movement, but thought it more advisable for the mills to shut down during the entire month of July.

One of Boston's leading paper makers said that he had been so pressed with business that he had not yet had time to give thought to the suggestions made from the West, and in consequence was not able to give an opinion on the subject. "It is too important a matter to discuss off hand," he said, "and while I favor any movement which will benefit the paper manufacturing industry of the country, I am not prepared now to say how far we can indorse this Western movement."

Another prominent paper manufacturer said: "We have been in combinations and agreements before, and we propose now to run our mills according to our own ideas; we are selling all the paper we can make, and when we cannot sell it we will close down."

Said another paper maker: "The conditions which control the paper business of the West are not such as affect the demand for our product. Last year our output was not over 80 per cent. of our yearly capacity, while now we are busy and must run full to fill orders."

Another said: "We are under contract to furnish so many tons of paper a day and must keep running, although we could stop one machine a few days if all other manufacturers in our line agreed to curtail their product."

"Yes," said a paper maker, "I would like to see every paper mill in the country shut down for a month; it would be the best thing for the paper making industry and prices would then improve when business gets better."

Such opinions as heretofore given could be extended into columns, but enough has been stated to convince the West that little help can be expected from this section in concerted agreement to shut down mills at any stated time for any number of days.

Secretary Barker has issued, under date of June 20, official notice of the seventeenth annual convention of the American Paper Manufacturers' Association. The convention is called for July 25 at the Grand Union Hotel, Saratoga, and the usual banquet will be given in the evening of that day. Mr. Barker's official circular is very brief, but to the point. No comment of the poor condition of the paper making industry is made, and no arguments are presented as to the reasons why the convention should be more largely attended than heretofore. Experience has possibly convinced the secretary of the association that such presentation of facts and platitudes are little heeded by paper manufacturers.

The movement made in Congress the present week to change the tariff on wood pulp to specific instead of ad valorem duties as reported by the finance committee, has attracted the interest of paper and pulp manufacturers hereabouts to the importance of adequately protecting this rapidly growing industry. Col. E. H. Haskell was seen yesterday by a reporter on this subject, and the colonel is reported as follows: "The paper and pulp makers," he said, "are opposed to ad valorem duties on principle, and will endeavor to secure specific rates because of the loop-holes which any other system leaves open for undervaluation.

"This country can produce pulp so cheaply that foreigners would have little incentive to send their product here if they were obliged to enter it at the actual cost, as they would have to do under a specific duty; but with the possibilities of fictitious values under the ad valorem duty they would have to work under greatly reduced profits or make the wages of their employees conform to the foreign standard.

"At present the wood pulp industry alone employs 70,000 men, who turn out a product of $35,000,000 annually, and who are earning $23,000,000 a year. Wood pulp has greatly decreased the cost of paper the past ten years, and has been so protected under the McKinley tariff at specific rates that its manufacture has increased immensely and quite a foreign trade cultivated by the more progressive of the mills.

"Just now another large plant is projected in Bangor, Me., which will give employment to 500 hands. The product of this it is proposed to export entirely, and the enterprise is undertaken, it is said, by men who are experienced in the business, and who will build a mill with capacity of 75 tons of pulp a day, dry weight.

"Reports from the Fox and Wisconsin River mills, where some $13,000,000 has been invested in paper and pulp mills, indicate a falling off in the demand, occasioned by the democratic policy. All these mills have been running night and day the year round, paying good wages, without being able to supply the demand. Last year they did not suffer because the World's Fair made an extra demand for print paper, but this year they have had to cut wages, and they are sending their samples to Europe and trying to compete with the English and German paper manufacturers just because they cannot find a ready market for all their paper at home. They can keep the mills running all the time easier than half the time, and they can afford to sell paper in Europe at a sacrifice to secure the trade and

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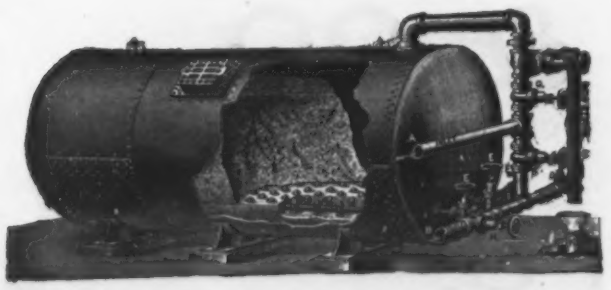

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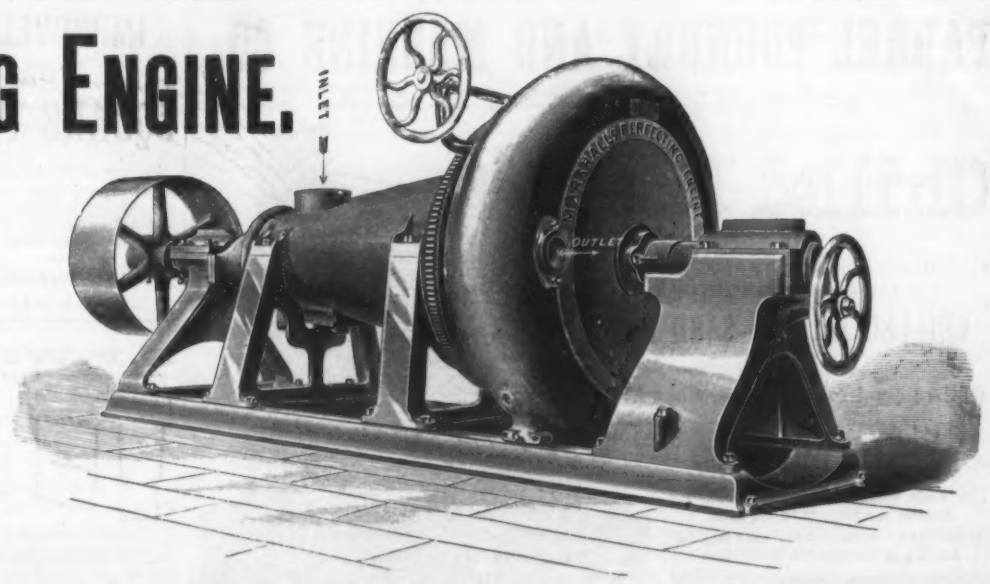

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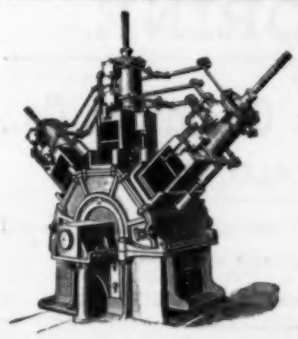

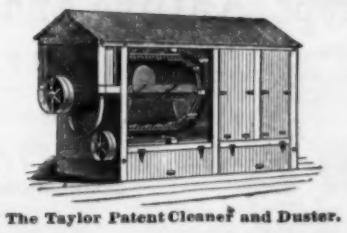

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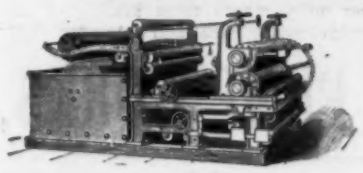

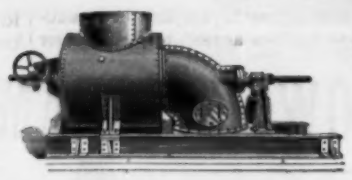

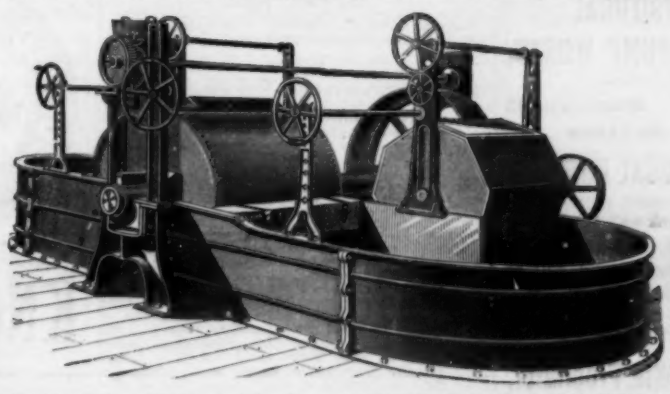

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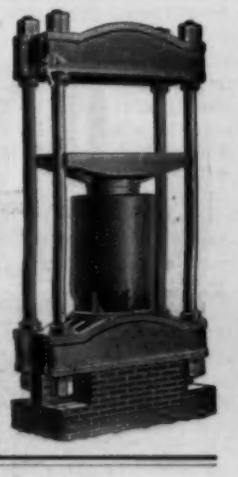

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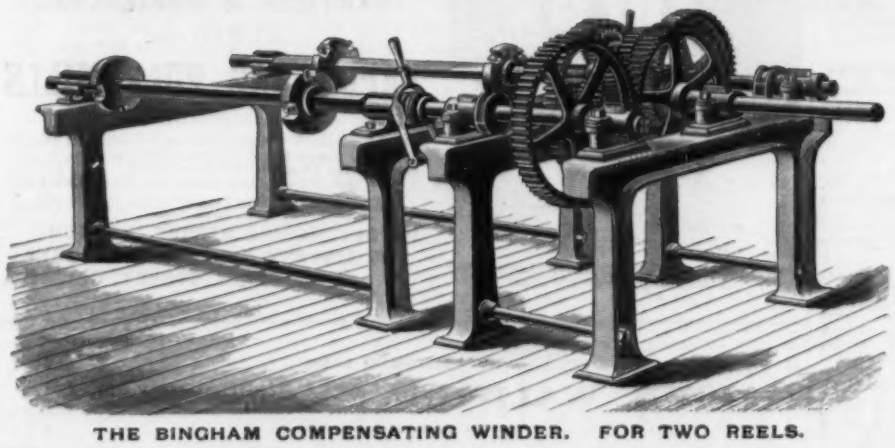

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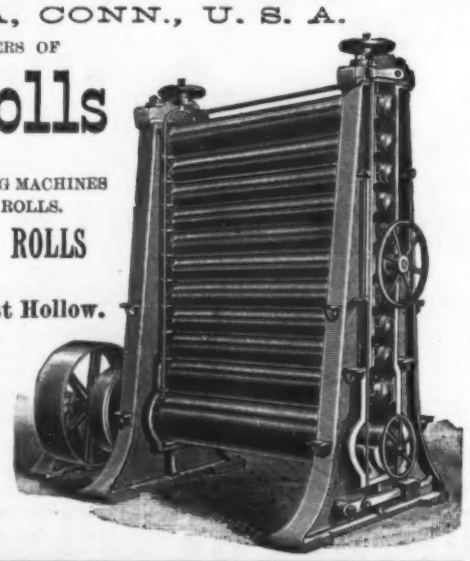

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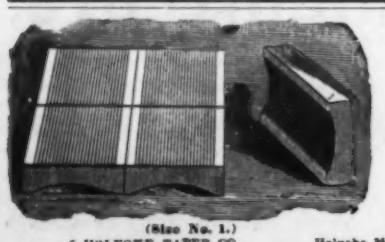

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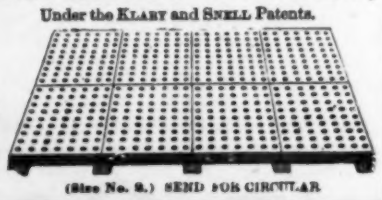

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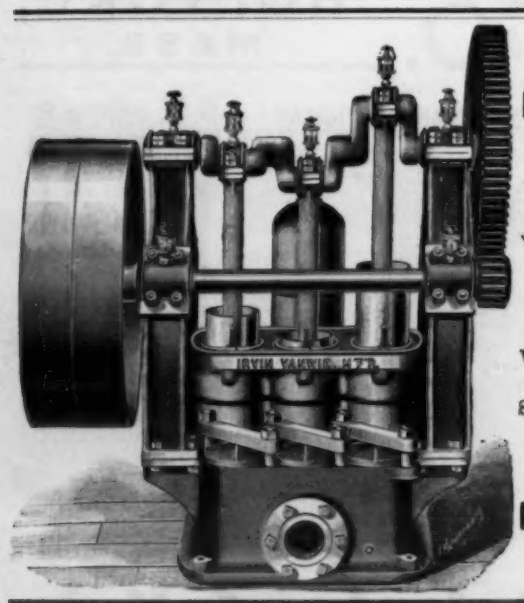

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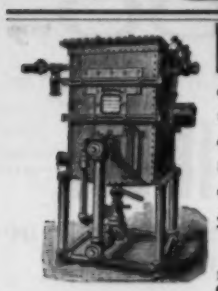

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General Chemistry.—With a short account of each element and its principal compounds; source, manufacture and properties of such compounds as are used in paper making.

PART II.

CHAPTER I.—**Cellulose.** Its chemical and physical properties, chemical relations and reactions.

CHAPTER II.—**Fibres.** Cellulose in its relations to the plant; the vegetable cell; the cell wall; changes which occur in the cell wall; lignin or incrusting matter; its chemical properties; characteristic markings of the cell wall in different fibres; characteristic cells other than fibres in different pulps. Classification of fibres: 1. Seed hairs; cotton, chemical and physical character of fibre, dimensions, analyses. 2. Bast fibres, as linen, jute, hemp, manilla, rhea, ramie, agave, sisal, adansonia, &c.; occurrence in plant, separation of filaments; character, size, distinguishing features of filaments and ultimate fibres, analyses and chemical properties. 3. Fibres and other cells from whole stems and leaves, as straw, esparto, bamboo; measurements and characteristics of fibres, yields, analyses; characteristic cells found with fibres. 4. Wood fibres; growth of wood; cambium layer; spring and autumn wood; sap and heart wood; resins; bark and knots; analyses of woods; specific gravities; ash; fuel values; occurrence and character of all woods used for pulp making.

CHAPTER III.—**Processes for Isolating Cellulose.** Rag boiling; special treatments for various fibres, as jute, straw, esparto; review of miscellaneous processes for treating wood; the water process, aqua regia, &c.; the soda process, history; preparation of liquors, boiling, washing, recovery, sources of loss; analyses of chemicals and liquors; the sulphite process, history; general principles; the different systems; liquor apparatus; preparation and analyses of liquors; digesters; linings; boiling; subsequent treatment of pulp; waste liquors; recovery. The sulphide and sulphate processes.

CHAPTER IV.—**Bleaching.** General principles; bleaching agents; bleaching powder; deterioration; analyses; preparation of bleach liquors; use in chests, engines, drainers; hot bleaching; acid bleaching; use of alum; chlorination and oxidation of fibre; washing stock, antichlors; loss in bleaching; ozone bleach; hydrogen peroxide; permanganate; sulphurous acid; special processes for various fibres.

CHAPTER V.—**Sizing and Loading.** Rosin; preparation of size; free alkali; free rosin; alum; analyses of alums; free acid; basic alums; sizing power; resinate of alumina; moss; casein; wax; starch; animal sizing; preparation and use; drying; loading; analyses of clays, agalite, pearl hardening, &c.; use; retention; ash; combined water; effect of alum and starch.

CHAPTER VI.—**Coloring.** Mineral colors; vegetable and animal colors; aniline colors; chemical properties; effect of alum and traces of bleach or alkali in different colors; distinguishing tests; effect of different waters.

CHAPTER VII.—**Water and Water Supply.** Character and analyses of different waters; ground waters; surface waters; river water; artesian well water; hard and soft waters; boiler scale; effect of waters on size and colors; various systems of filtration; use of alum; softening water; self purification of streams; natural filtration; effect of storage; vegetation in ponds; crenothrix; consumption of bleach by waters.

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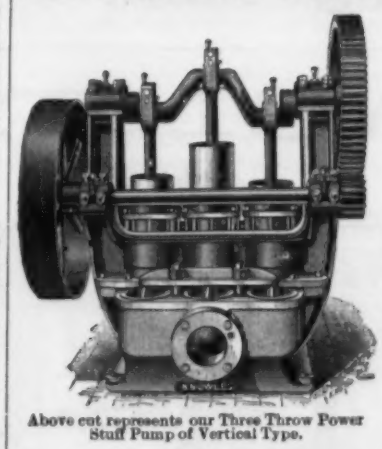

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to get rid of the surplus; but the properties have depreciated in value, and one old paper manufacturer said that those mills would not to-day sell for one-half what they cost or would have sold for in 1892, simply because the determined warfare on the manufacturers of the country has destroyed the confidence of the people in this business as well as every other."

Among recent trade visitors were Hon. Wm. Whiting, W. N. Caldwell, T. H. Spencer, Mr. Heywood and George Castle from Holyoke; Frank Pierce and Mr. Merriam, of Springfield, Mass.; James Logan and Mr. Williams, of Worcester, Mass.; James R. Bailey, of Lawrence, Mass.; W. J. Warren, of West Dudley, Mass.; Frank P. Carpenter, of Manchester, N. H.; William Foulds, of Manchester, Conn.; A. C. Moore, of Bellows Falls, Vt.; Col. F. E. Heath, of Waterville, Me.; William Brown, Hugh J. Chisholm and Chas. R. Milliken, of Portland, Me.; Eugene Daniel, of Franklin, N. H.; W. C. Sheehan, of Albany, N. Y.; I. C. Blandy, of Schuylerville, N. Y.; W. A. Castle and N. V. Hitchcock, of New York.

Mr. Baird, Boston manager of the American Straw Board Company, has been confined to his home in Brookline since his return from New York last week. Mr. Baird caught a severe cold on his return trip, which nearly developed into pneumonia. He is now so far improved that he is expected to be at the office next Monday.

T. H. Keenan has just returned from a ten days' sea trip to Norfolk, Va., for his health.

Any paper manufacturer wanting a man experienced in the process of water proofing paper is referred to the want column of THE PAPER TRADE JOURNAL.

Boston is having some very warm weather now, and it is rather difficult at times to tell what to take to keep cool. DELESDERNIER.

Holyoke.

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., June 21, 1894.

There is little if any improvement to record in business, and very little indication of a revival in the near future. The summer season always brings a period of quietude, but it is worse than usual this year

Now and then one hears of a fair sized order placed, but this is the exception and not the rule. Orders which caused very little comment eighteen months ago would be very welcome at present. Where tons were ordered formerly, cases and reams rule now. There is no change in prices. Standard grades are held at ruling prices, and goods of cheaper quality are holding their own.

Very little can be said of the stock market. That trade is very dull is well known, and it is not likely to improve right away. The dealers, however, are taking things as they come, and whenever they succeed in selling a bill of goods they look on it as so much good luck. Domestics are faring the best just now, but the trading in these goods is by no means lively.

The Holyoke Envelope Company makes this report of its affairs: Fixed capital, $30,000; capital paid in, $30,000. Assets: Land and buildings, $55,000; machinery, $50,000; cash and debts receivable, $66,892; manufactures and merchandise, $38,243; total, $210,135. Liabilities: Capital stock, $30,000; debts, $139,004; profit and loss, $1,100; reserve for depreciation, $10,031; total, $210,135.

The manufacturers at South Hadley Falls do not expect to make any extensive repairs or improvements this season. In fact both the Hampshire and Carew Mills have had considerable money expended on them within a year, and this will suffice for some time to come. The Carew Mill has been running five days a week for some time and the Hampshire about the same.

The Holyoke Co-operative Bank stockholders have selected Joseph W. Moore, of the Whiting Paper Company, president, and E. A. Bardwell and James S. Lassiter are also among the officials. The affairs of the bank are in an excellent condition, and considerable money is being earned on real estate loans. There are a large number of shareholders, and it is a money saving institution.

The Mt. Tom Sulphite Company has just made this corporation return: Fixed capital, $300,000; capital paid in, $300,000. Assets—Land, water power, buildings and machinery, $415,596; cash and debts receivable, $31,512; manufactures and merchandise, $58,972; total, $506,081. Liabilities—Capital stock, $300,000; debts, $184,525; reserve for depreciation, $21,556; total, $506,081.

The aspect of the *Transcript* Publishing Company's printers' strike has not changed materially and both sides are holding out well. It is now six weeks since the men went out and only three have gone back to work. A committee made an attempt a short time ago to patch up the difficulty, but it failed. The labor unions of the city are now considering the advisability of publishing an opposition paper.

The wedding of John W. Prouty, the veteran foreman of the Whitmore Manufacturing Company's mill, and Isabella H. Dewar, of Easthampton, took place this week at the bride's home. Mr. Prouty has many friends in the city, all of whom wish him much joy. He has already raised one family, all of his sons being married and having children of their own.

The recent rains have added quite a quantity of water to the river and there is no immediate danger of a scarcity.

Casper Ranger will do the work on the Whiting No. 2 mill, which will begin some time in July.

The weather this week has been very warm, and one case of sunstroke has occurred during that time. H.

Great Britain.

[FROM OUR REGULAR CORRESPONDENT.]

LONDON, June 8, 1894.

France is about to "enfranchise herself from the necessity of purchasing the wood pulps of Norway and Germany" by exploiting Canada. The Société Franco-Canadienne pour la fabrication de la pâte à papier has been started in Paris with an appeal to the patriotism of the paper makers to buy from their French-Canadian cousins. Just at the same time, here in London, the Newfoundland Chemical Wood Pulp Company, with a capital of $580,000, has been floated to convert Newfoundland timber into sulphite pulp. The Government has granted a license to fell timber over an area of 130 square miles of virgin forest at the head of Placentia Bay, and the company can cut and come again at the forest primeval for the next ninety-seven years. It is bound to spend $130,000 on buildings and plant and has to pay three sums of $2,600, as rent, at stated intervals. The vendors get $190,000 in shares for putting the public into this good thing.

Some time ago the English commercial world came to the conviction that wasting money on law and lawyers in commercial cases was arrant foolishness. Hence in every trade engineered by the Chambers of Commerce, committees of arbitration were appointed and for speed, economy and correctness of decision the rulings of these experts have compared admirably with the expensive dilatoriness of the law. Therefore the lower courts have been more and more neglected and times are dolefully bad with the barristers. Conscious that the feverish spirit of competition has at last broken down their monopoly the judges have thrown out a bold bid for more business. It is proposed that a special court shall be constituted in which merchants can have their disputes settled with reasonable speed, either by a judge alone or by special jurors from the city. As the commercial business brought into the courts has gone down to nothing the bar hail this proposal with unanimous delight; but they are too late. Law should have been made cheaper and quicker for mercantile customers ages ago. The rival shop has all the business now and will keep it.

Every newspaper reader must notice how certain little trade fables travel round in cycles. Take the case of that mill chimney of paper at Breslau, for instance. There never was a mill chimney of paper at Breslau; Mr. Ben Trovato invented it about eight years ago, I think. Yet every eighteen months or so the paragraph goes the round of a certain portion of the English and American trade journals and then starts on a frantic career to and fro in the lay press. Subject No. 1 gives the height of one chimney; subject No. 2 labels it a woolen mill; subject No. 3 knows a German name and puts it down as that of the owner, and so on. The "fact" that there is a paper chimney at Breslau carries consolation to thousands of homes—and there isn't one.

I notice another pretty little tale just beginning its fiftieth tour. It is a fantastic explanation of the word foolscap. Charles I., the story goes, granted a paper monopoly and every sheet bore the royal arms as watermark. Cromwell by way of a jest substituted for the regal arms a fool's cap and bells. This is all flapdoodle. I have worked for hours on watermarks at the British Museum and never came across either of the above marks, tempo Charles I. or Cromwell. It is Mr. Ben Trovato once more. An American book of reference says that fool's cap is from the Italian *foglio capo* which is at any rate a better attempt at explanation than the Cromwell story. The famous Dr. Busby always twisted this size of paper into dunce caps. This last is my guess at the puzzle; but seriously I will vouch for one thing about the fool's cap in connection with the paper trade, although I do not say for one minute that the following has anything to do with the naming of this size of paper.

Spilman, so the name is spelt in the license, was Queen Elizabeth's jeweler, and was granted a monopoly by good Queen Bess (dated February 31, by the by). He set up the first English paper mill at Dartford, in Kent. Don't talk to me about "John Tate the younger." With Mrs. Betsy Prig, "I don't believe there ever was no sich a person." Anyhow, John Speilman (usual spelling) made writing paper, and was knighted, and if I'm not mistaken Shakespeare made a topical allusion to him and his paper mill in the second part of King Henry VI.: "His tomb is in the parish church at Dartford to witness if I lie, and on it is a coat of arms, one of the quarterings, of which is a jester wearing a fool's cap." So here at any rate is the foundation of another explanation.

What a mountain of paper must be used up annually in these cheap editions of standard novels! You can buy the works of any author who is thoroughly dead, too dead to object, for four pence half penny each. For 9 cents you can buy "Dombey & Son," or "Vanity Fair," well printed, if in rather small type, on decent paper. I pick these out as examples. They have all of the original pictures, a couple of hundred or so of Thackeray's own sketches in the latter, and run to about 350 royal octavo pages each. A cheap edition of Silas K. Hocking's works goes off like hot cakes in the North of England, and all these dead and gone authors, English and American, sell by the cartload. An excellent thing for the paper trade, Mr. Editor, and a poor lookout for the modern author, who can engineer a little novel, but who cannot quite come up to Thackeray, Hawthorne, Dickens, Irving & Co.

A Brussels paper gives a good account of the Scandinavian wood pulp trade, as it stands at present. Prices are better by 4 kroner (about a dollar) for wet and 8 kroner for dry than in 1891. Purchasers must buy forward, and at the beginning of this year 130,000 tons were on order. The demand was so brisk that the combine fixed the reduction of production at 23⅓ per cent. in lieu of the 33⅓ per cent. originally arranged. The greater part of this year's production is already sold at good prices. The good times, however, have led to the inevitable rush into the business; new factories are springing up, and existing mills are making additions, so that the old evil of overproduction is within sight once more. The native consumption of pulp remains stationary. England and France constantly take more. Germany imported 10,000 tons more Norwegian pulp in 1893 than in 1892, but this was because her own rivers were dried up. At present there are fifty-nine pulp mills in Norway, and of these one makes casks, three manufacture board and ten paper. Norway, including Swedish pulp from Norwegian ports, has exported the following amounts (calculated wet) during the last six years:

	Tons.		Tons.
1888	175,000	1891	230,000
1889	190 000	1892	215,000
1890	207,000	1893	230,000

As for cellulose the cholera and the consequent restrictions on rags gave the trade a leg up in 1892, and the good times for sulphite and sulphate continued in 1893.

There are a crowd of little mills for sale here now, and if things go on as they are doing, toward the end of the century there will not be a one machine works left in the country. Few mills are built and many mills go to grief; the average number of machines at work remains almost stationary. "How rede you the riddle? 'Tis of the simplest." The maker is learning that the little mill is out of date and where there is financial ability the watchword is extend. All the same, whether for the fat or for the lean kine, trade is in a parlous state.

One of the Spicers died lately leaving a personality something short of $350,000; but he was a childless man and had made many munificent gifts during his life to the religious sect to which he belonged.

ALFA.

Accidents.

Fred. Schrumpf, employed in the paper mill at Niles, Mich., had his hand badly crushed in the calenders on June 15.

Edward Ingmire, an employee of the Delaware Paper Company, Delaware, Ohio, was badly scalded by steam on the 9th inst.

John Boyle, employed by the Niagara Falls Paper Company, Niagara Falls, N. Y., had his left arm broken by being recently caught in a belt.

In the investigation of the New York police now being conducted by the Lexow Committee, S. Rawitser, of S. Rawitser & Co., dealers in woolen rags, 138 Duane street, yesterday testified that his firm paid money to someone from the corporation counsel's office for the privilege of having goods on the sidewalk. Montrose Berman, the financial manager of the firm, testified that he had paid the ward man of police precinct $20 a year in order to stop complaints by policemen against the firm for allowing its goods to occupy the sidewalk. Two years ago the amount was increased to $25.

Mortgages, Etc.

[In the appended list R. signifies a renewal of a pre-existing mortgage; B. S., bill of sale; T. D., trust deed, and Real, a mortgage on real estate.]

EASTERN STATES.

Mortgagor.	*Amount.*
George H. Ensworth, Springfield, Mass.	$125

MIDDLE STATES.

Frederick W. Young, Jersey City, N. J.	450
E. C. Lester, Brooklyn, N. Y.	500
A. D. McConnell, Buffalo, N. Y.	1,000

WESTERN STATES.

Rosalio Salmon (DeLacy & Salmon, *Daily Record*), San José, Cal.	930
Riley & Sherraden, Council Bluffs, Ia. (B. S.)	4,500
J. T. Sherman, Newton, Ia.	1,000
F. L. Hill, Oto, Ia.	250
H. C. Stivers, Brainerd, Minn.	200
McDonald & Eick, Cincinnati, Ohio	1,877
Toledo Spun Glass Novelty Company, Toledo, Ohio	500

SOUTHERN STATES.

George H. Reed, Covington, Ky. (Real)	500
George H. Reed, Covington, Ky. (Real)	2,000
Sunday Mirror Company, St. Louis, Mo.	1,121
L. F. Leach, Jr., Guthrie, Okla.	250

CANADA.

Island Reporter Printing and Publishing Company, Sydney, N. S. (B. S.)	1,000

LIENS DISCHARGED.

Andrew Rudolph, Detroit, Mich.	700

Obituary.

JOHN G. CRUMP.

Judge John G. Crump, editor of the *Day*, New London, Conn., committed suicide by shooting himself on the evening of June 19. Judge Crump was forty years of age; he was a graduate of the Yale law school and a practitioner of prominence in the State. He was at one time editor of the New London *Telegram*, and had filled many local offices, among them District Attorney, Judge of the Police Court and Representative in the State Legislature. A widow and two children survive him.

HENRY C. STETSON.

Henry C. Stetson died at his home, No. 212 West Forty-fourth street, New York, on June 15, after a short illness from typhoid pneumonia. Born in Roxbury, Mass., in 1834, he came to New York in 1869, and became a member of the firm of Bowles Brothers & Co., bankers. After remaining with that firm until 1873, he entered the paper business as dealer and manufacturer; under the firm name of Stetson & Sayce, No. 140 Nassau street. Mr. Stetson was also president of the Bates Automatic Elevator Company, of No. 41 Park row. His wife, who died some years ago, was Serena Garretson, of this city. Three sons survive him.

JESSE JONES.

Jesse Jones, a member of the firm of Jesse Jones & Co., one of the largest paper box manufacturers in the country, died suddenly at the Broadway Central Hotel, New York, on June 15. Mr. Jones had been on a business trip through the New England States, and had reached New York on his way home. The cause of death was heart disease. He was ill only three hours. Mr. Jones was a native of Philadelphia, and was about forty-one years old. He was a self-made man. Twenty years ago he started in the business of manufacturing paper boxes on Sixth street, above Commerce street, Philadelphia, with Charles F. Stone, who is still a member of the firm. The present establishments are at 615 and 617 Commerce street and Twelfth and Noble streets. Four years ago the capacity of the Commerce street factory was doubled. Mr. Jones was a member of the Manufacturers' Club, of the Trades' League and of the Masonic fraternity. He was a trustee of the Temple College and a deacon of St. John's Methodist Church, George and Beaver streets. Mr. Jones was a widower and had no children.

Percy Pharmer, a young man who was badly injured recently in the pulp mill at Fort Miller, N. Y., has since died.

In Town.

A. N. Burbank and W. T. Barker, Boston, Mass.; C. E. Callender, Glendale, Mass.; Frank Gilbert, Troy, N. Y.; A. D. Remington, Watertown, N. Y.; W. H. Eaton and A. W. Eaton, Lee, Mass.; H. E. Rogers, South Manchester, Conn.; J. T. Emerson, Claremont, N. H.; O. S. Greenleaf, Holyoke, Mass.; Ed. McCready, Catawissa, Pa.; John A. Hall, Lambertville, N. J.; S. A. Rudolph, Philadelphia, Pa.; A. Adams, Chagrin Falls, Ohio.

J. K. Dexter, Springfield, Mass., formerly doing business under the style of J. K. Dexter & Co., will represent Rudolf Helwig, sole agent in the United States for the Zellstofffabrik Waldhof. Mr. Dexter will doubtless find a ready sale for the well-known high grades of Waldhof sulphite fibres among his many friends in Western Massachusetts and Connecticut, in which sections he will look after the trade.

Personals.

The smile which now illuminates the face of Ed. Bartow, of the Morse Building, is due to the fact that he yesterday became a grandfather—and it's a girl.

Col. G. W. Thompson, of the Diamond Mills Paper Company; S. Hammerschlag, of the Hammerschlag Manufacturing Company, and Mr. Ballard, of D. S. Walton & Co., have gone to the Thousand Islands on a fishing expedition.

J. F. Romig, of the National Folding Box and Paper Company, and his wife celebrated their twentieth wedding anniversary at their new home, 1247 Dean street, Brooklyn, on Monday last. Mr. and Mrs. Romig, who came from Pittsburg, Pa., have since their residence in Brooklyn made hosts of warm friends by their charming hospitality. The parlors and library were handsomely ornamented with palms and roses in the greatest profusion. Mr. and Mrs. Romig, together with their eight children, received the guests in the front parlor, standing under a floral arch. Musicians, who played intermittently throughout the evening, were screened from sight by a mass of tall, thickly leaved palms. An elaborate collation was served to the 150 guests present, and Mr. and Mrs. Romig were the recipients of more than 100 pieces of china and rare bric-à-brac from their friends in Brooklyn, Pittsburg, Allegheny, Cleveland, Chicago, New York and Philadelphia.

General Notes.

Before emptying lubricating oil out of the barrel it is a good plan to nail a piece of mosquito netting or a fine sieve over the bunghole, as then all chips, old bungs, &c., will be excluded from the oil tank.

The Worthy Paper Company, Mittineaque, Mass., has issued a new sample book of its "Sterling" papers—ledger, bond, linen and superfine. These goods are of superior quality, and merit the attention of buyers.

There is a movement afoot to connect the many towns of Long Island by trolley car lines as far as Patchogue on the south side and Oyster Bay on the north side. Charles H. Mullin, of the Mount Holley Paper Company, is one of the stockholders and incorporators of the company which will build the roads. He will doubtless derive more profit from this than from paper making. These lines will compete with that overgrown monopoly, the Long Island Railroad.

Warren Webster & Co., Camden, N. J., furnished a 2,700 horse power feed water heater and purifier of their make to the Otis Steel Company, Cleveland, Ohio, the condition of sale being that if the heater did not perform the duty expected of it, there should be no sale. The result has been that the Otis Steel Company has bought the heater, the monthly saving in expense being sufficient to pay for it, and satisfaction with the result is vouched for by the Cleveland concern.

A cross belt running from a large driving to a small driven pulley often crowds over on the small pulley and runs half on and half off the small pulley, even though the two pulleys are in the same plane. The reason is that the cross comes close to the small pulley and the taut fold of the belt pressing hard against the slack fold crowds it over. The crowding is always in the direction of the slack fold. If the two pulleys have nearly the same diameter, so as to throw the cross about midway between them or at least some distance from the smaller pulley, there will be no trouble.

After two years experimenting and testing, Eckley B. Coxe, of Hazleton, Pa., who was appointed one of a commission by the State Legislature to investigate the waste in coal mining and its utilization, has solved the problem and made some remarkable discoveries in this direction. With the aid of a specially constructed stoker and fan blasts not only can the dirt heretofore thrown away be utilized, but in steam production better results have been obtained from it and at 50 per cent. less in cost. A number of experts who examined the test plants say that it will revolutionize the production of steam power.

In the case of Maynard, Merrill & Co., appellees, against William Beverly Harrison, appellant, in the United States Circuit Court of Appeals, Judges Wallace, Lacombe and Shipman have handed down their decision. The suit was brought by Maynard, Merrill & Co., New York, to test the right of a person to sell copyright books as books when such person had bought said books as damaged paper stock. The opinion of the court is in brief that the owner of a copyright cannot, by virtue of the copyright statutes, restrain the sale of a copy of a copyright book the title of which he has transferred but which is being sold in violation of an agreement entered into between himself and the purchaser.

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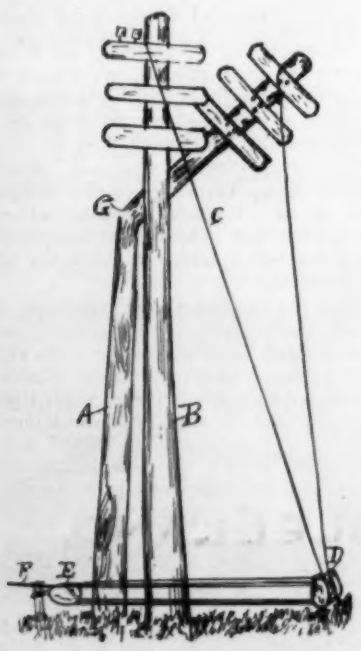
New Inventions—XL.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By Geo. Damon Rice.

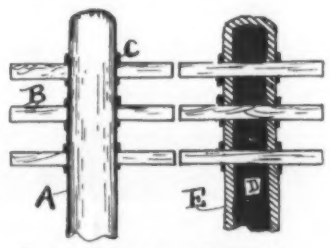
With a somewhat exhausted supply of the proper kind of wood for use in constructing telegraph lines. trolley wire systems, &c., come various substitutes for the same. Metal and other poles have been extensively employed of late for both the trolley wire and other systems. Among these is a pole made of paper pulp. A paper pulp pole for telegraph wire use was introduced a few years ago, but owing to the lack of improved machinery and processes which are now to be had the paper pole did not get much beyond the experimental stage. Parties have now introduced a method of making poles from paper material which will not crack in a dry atmosphere, warp when exposed to heat or frost, nor dissolve when subjected to a long rainy or damp spell. Poles of this kind have already been put to very severe tests in order to ascertain their practicability. They are cast hollow, so that the principle of increased strength is derived through the fact that a hollow rod is stiffer and less liable to bend or break than a solid one of the same diameter. Common paper pulp is used in making the poles, but mixed with this pulp are several ingredients which, known only to the inventors, make the poles durable and non-cracking.



Paper Pole vs. Wood.

An illustration of two poles is given. The one marked A is a common wooden pole, while the one marked B is of paper. In order to test the efficiency of the paper poles the promoters of the scheme put various poles to test, on the plan shown in the diagram. They set one of their paper poles in the ground, and beside it set whatever pole they wished to test. In this case a wooden one was used. A large iron bar is driven into the ground, where the rope block E is fixed with a chain. Other block pulleys are at D, where more bars and chains hold same. Then the rope C is run up to the tops of the poles. The continuation of the rope is at F. A pair of oxen are hitched to the end of this rope, and as the rope doubles and redoubles through the block system several times, it follows that the pulling power of the oxen is doubled several times over, and so the pull on the ropes C is very severe. When the test was made the ox team was started, the ropes tightened, and in a moment the wooden pole A bent over and over, until it stood the strain no longer and snapped off at about G.

The powerful, stiff, hollowed paper pole, although subjected to the same strain, merely bent over a little under the pressure, and there it remained. The ox team, with the block system of pulleys and ropes, could not break it. This assured the durability of the paper pole. The next cut shows the interior make of the pole.



The Inside of the Paper Pole.

In this drawing A represents the upper portion of the paper pole. E is an interior view showing the hollow and how the cross sticks are set in for telegraph use. The hollow is marked D. The cross sticks are signified by B in the pole A. The method of holding the sticks in place is by the use of the key shaped wooden pieces C, which are driven in on either side of the pole.

The composition used in the stock of which the poles are made consists wholly of paper pulp, in which are mixed several ingredients for giving the poles ability to resist the heat of the sun, rain, dampness, &c. Borax, tallow, in small quantities, &c., are said to be some of the ingredients. A long shell made of iron, divided lengthwise from end to end, is the mold in which the pole is cast one at a time. A core retains the hollow in the pole. The cost is said to be less than that of a wooden pole. The inventors claim that the pole will last indefinitely.

New Plastic Compound.

A new and useful plastic compound of cellulose having peculiar properties which render it of great value in the industrial arts, may be rolled in sheets or otherwise worked or molded, or it may be distended or dissolved in water. Upon decomposition it yields up cellulose in a new and useful form. It may be prepared by a simple and comparatively inexpensive process hereinafter described.

The process consists essentially in first treating cellulose, cellulosic raw material or equivalent substances with a strong solution of an alkaline hydrate, and then treating the mass with carbon di-sulphide.

In treating the cellulose the material to be treated, for example cotton in any of its forms, raw or manufactured, flax in the form of fibre or otherwise, chemical wood fibre, &c., is saturated in any convenient way with a strong solution of an alkaline hydrate, preferably caustic soda, the strength of the solution being preferably from 12 to 20 per cent. of sodium oxide. When the mass has been uniformly saturated, the excess of the alkaline solution may be removed by squeezing or pressing or by means of a centrifugal machine. The resulting mass, which then holds from twice to four times its weight of the alkaline solution, is preferably then broken up or loosened, and placed in a closed chamber. Into this chamber carbon di-sulphide is introduced, the quality employed being from 10 to 40 per cent. of the weight of the raw material, that is of the cellulose originally employed.

Owing to the volatility of the carbon di-sulphide, it rapidly diffuses itself in the form of vapor throughout the chamber, and the mass of material contained therein. The uniform inter-action of the di-sulphide and fibrous material may be aided by employing a cylindrical or spherical chamber so mounted as to be capable of rotation throughout the period of action, or any means may be employed for agitating the contents of the chamber. The action of the di-sulphide may also be considerably accelerated by raising the temperature in the reaction chamber, which in this case must be so constructed as to withstand the resulting increase of pressure. A temperature of from 60° to 80° Fahr. is preferred. It may be added that the penetration of the mass by the di-sulphide may also be promoted by exhausting the air from the reaction chamber, and admiting the di-sulphide in the form of vapor. The action completes itself sufficiently for most purposes at the ordinary temperature in from three to five hours, but may be prolonged with advantage when it is desired to produce a compound as free as possible from residual fibre.

The product obtained from the treatment described is a viscid mass, composed of a compound in which the essential and characteristic component is cellulose combined with other constituents derived from the reagents employed, and upon the addition of water the viscosity of the resulting aqueous solution is such that the mechanical aid of crutching or paddling is required in its production. By such aid, however, a homogeneous solution is rapidly produced. This aqueous solution is a solution in the ordinary and general sense of that word, and it may be regarded as a solution for all practical purposes; but this does not imply that it is a true solution in the technical chemical meaning of that word, as this is a point not yet determined. The original viscid product may be employed for certain purposes without being distended or dissolved in water, or it may be so distended or dissolved, this subsequent treatment depending upon the uses for which the compound is to be employed. The viscid mass or the solution or mixture thereof may be treated for the removal of any undissolved portions or residual fibre by straining in any convenient manner. By the process described a highly viscous bright solution or admixture is produced, which may be employed for a large number of useful purposes.

If it is desired to remove from the compound the by-products of the inter-action of the reagents, which are not essential to the compound, either in the plastic condition of the latter or after treatment of the same with water, such removal may be effected by a suitable process of purification, as by precipitation by alcohol, or by a saturated solution of sodium chloride, and decantation.

This compound is directly applicable to many valuable uses, such as sizing and filling paper and cloth. For sizing paper, the compound, preferably after treatment with water, may be added directly to the stock in the beating engine, after which alum is added as with ordinary rosin size. For sizing cloth either the threads or the fabric may be passed through the solution, and then dried and washed. The solution may be used as an adhesive vehicle for carrying clay or other fillers, in case of either cloth or paper. This compound is patented.

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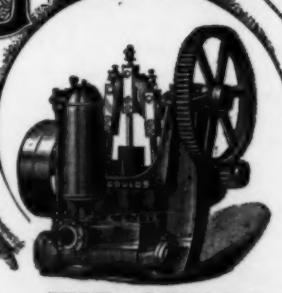
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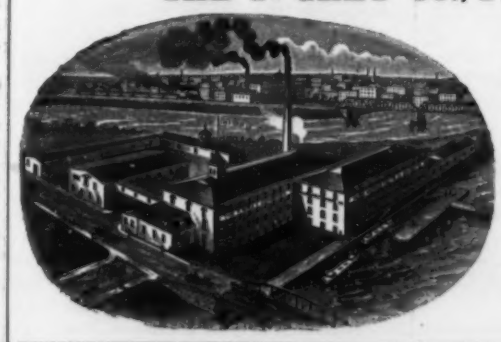
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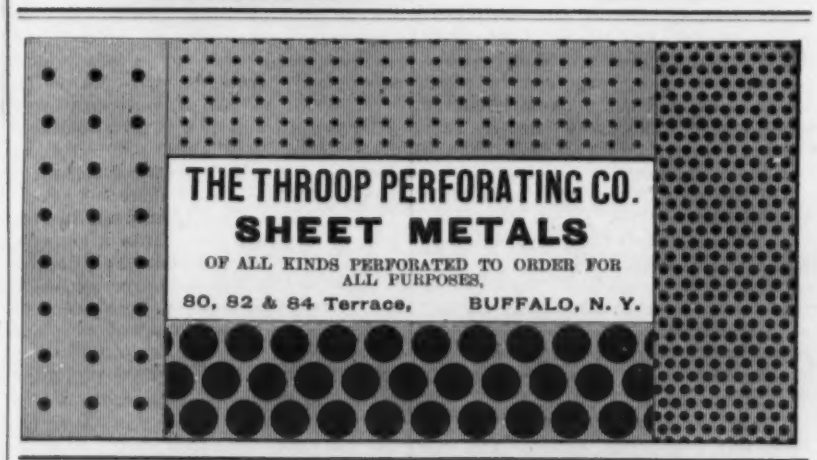

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Imports and Exports.

IMPORTS AT NEW YORK.

FOR THE WEEK ENDED JUNE 15, 1894.

An. Colors..	387	$26,353	Paper.....	345	$17,786
Alum.....	—	—	Steel Pens...	2	7
Alum's Cake	—	—	Stationery...	11	221
Bl. Powders	509	8,945	Slate Pencils	—	—
Soda Ash...	5,376	21,175	Clay.....	—	1,020
Soda, Caus.	76	858	J'te B'ts, &c.	—	—
Soda, Sal....	280	667	P. Hangings	15	557
Soda, Hypo.	100	557	P'p'r Stock..	5,109	33,603
Ultramarine	52	1,865	Terra Alba..	—	—
Books.....	297	24,084	Waste.....	—	—
Newspapers.	191	7,986	Wood Pulp..	1,747	10,917
Engravings.	68	5,257			
Ink.....	74	1,493			
Lead Pencils	8	1,813	Totals....	15,047	165,464

Imports General Merchandise for the week ended June 15, 1894.....$6,406,253

IMPORTS OF PAPER STOCK AT NEW YORK.

FROM JANUARY 1 TO JUNE 20, 1894.

Whence Imported.	*Rags.*	*Old Papers.*	*Chemical Fibre.*	*Ground Wood.*	*Manilla Stock.*
	Bales.	Bales.	Tons.	Tons.	Bales.
Alexandria...	1,249	....	....	....	....
Antwerp.....	296	259	678	....	8,066
Aspinwall....	90	....	....	....	....
Bordeaux.....	548	....	....	....	....
Bremen	532	....	6	....	4,026
Bristol.....	....	....	....	....	2,871
Buenos Ayres.	26	....	...	....	....
Calcutta.....	....	....	....	....	2,797
Cent. America	60	....	....	....	....
Christiania....	....	....	396	....	474
Copenhagen..	353	....	855	....	1,192
Dublin.....	....	186	....	....	....
Dundee.....	....	....	....	....	658
Dunedin.....	....	....	....	....	183
Fiume.....	....	....	99	....	....
Geestemunde.	232	....	....	....	1,309
Genoa.....	....	....	...	....	3,256
Glasgow..	288	77	....	....	187
Gothenburg ..	....	....	99	....	....
Hamburg.....	1,236	239	478	....	3,065
Hamilton.....	....	....	....	....	49
Hiogo.....	8,201	....	....	....	....
Hong Kong...	48	....	....	....	....
Hull .....a	2,120	185	922	....	9,769
Kobe.....	97,285	....	....	....	....
Leghorn.....	1,590	....	....	....	....
Leith.....	....	159	....	....	138
Liverpool.....	419	840	....	....	12,542
London.....	3,097	1,357	20	....	7,643
Marseilles....	86	....	....	....	473
Nassau	48	....	....	....	....
Newcastle	....	73	....	....	2,424
Rio.....	26	....	....	....	....
Rotterdam....	524	29	517	....	6,276
Southampton.	....	....	....	....	160
Stettin..	2,372	....	596	....	6,359
Trieste.....	....	....	49	....	....

a. Including 347 bales cotton waste.

NEW YORK IMPORTS.

FROM JUNE 13 TO JUNE 20, 1894.

Paper Stock.

Train, Smith & Co., Chicago, Antwerp, 900 bs. bagging.
Burgass & Co., by same, 270 bs. bagging.
James Pirnie, Waesland, Antwerp, 313 bs. bagging, 14 bs. manilla.
Castle & Gottheil, Friesland, Antwerp, 240 bs. bagging.
Charles Zoller, Aller, Bremen, 6 tons chemical fibre.
Train, Smith & Co., Atlantic, Hamburg, 173 bs. bagging.
F. Salomon & Co., Marsala, Hamburg, 60 bs. rags, 117 bs. papers, 228 bs. manillas.
S. Goldman, by same, 148 bs. bagging.
Lewy Brothers, Buffalo, Hull, 344 bs. rags, 170 bs bagging.
Atterbury Brothers, by same, 70 bs. rags.
R. H. Overton & Son, Abana, Leith, 138 bs. manillas.
J. W. Mason & Co., Tauric, Liverpool, 337 bs. manillas.
Lewy Brothers, Alecto, London, 90 bs. rags.
Darmstadt & Scott, by same, 6 bs. rags.
J. W. Mason & Co., by same, 102 bs. manillas.
R. Helwig, Loch Marel, Rotterdam, 103 tons chemical fibre.
Train, Smith & Co., by same, 179 bs. bagging.
Lewy Brothers, Gothia, Stettin, 798 bs. bagging, 181 bs. rags.

Paper.

Henry Gade, Waesland, Antwerp, 9 cs.
Dinglestedt & Co., by same, 14 cs.
Charlier & Schiebler, by same, 20 cs.
L. C. Wagner & Co., by same, 5 cs.
A. H. Abbott & Co., by same, 17 cs.
R. Tuck, Sons & Co., Lahn, Bremen, 10 bs. colored.
B. Lawrence Stationery Company, Columbia, Hamburg, 20 cs.
G. W. Sheldon & Co., by same, 5 cs.
Nevius & Haviland, Germanic, Liverpool, 5 cs. hangings.
E. J. Riley, by same, 2 cs. hangings.
R. Graves & Co., La Touraine, Havre, 3 cs. hangings.
Hagan & Shaw, by same, 2 cs.
American Tobacco Company, by same, 11 cs.
W. H. S. Lloyd, New York, London, 6 cs. hangings.
Henry Lindenmeyr & Sons, Marsala, Hamburg, 50 cs.
L. De Jonge & Co., Veendam, Rotterdam, 2 cs.
G. W. Sheldon & Co., Maasdam, Rotterdam, 20 bs.
Eimer & Amend, by same, 1 cs.
E. & H. T. Anthony & Co., by same, 24 cs.
A. V. Benoit, Manitoba, London, 1 cs.
Henry Bainbridge & Co., by same, 4 cs.
L. Windmuller & Co., Rugia, Hamburg, 2 cs.
Dingelstedt & Co., by same, 6 cs.
R. F. Downing & Co., by same, 49 cs.
R. Schulzberger, by same, 1 cs.
J. Marsching & Co., Rugia, Havre, 2 cs.
J. Campbell & Co., Friesland, Antwerp, 6 cs.
Kupfer Brothers, by same, 15 cs.
Wm. Seyd, by same, 20 cs.
Eagle Paper Company, 67 pkgs.
Burrowes Brothers Company, The Queen, London, 4 cs.

BOSTON IMPORTS.

FROM JUNE 14 TO JUNE 20, 1894, INCLUSIVE.

Paper, &c.

Wm. Guild & Co., Gallia, Liverpool, 6 bs. periodicals.
T. Y. Crowell & Co., by same, 1 cs. charts.
Benjamin French & Co., by same, 1 cs. photo papers.
J. Dickinson & Co., by same, 50 cs. paper.
Dennison Manufacturing Company, by same, 7 bs., 8 cs. tissue paper.
D. H Langworthy, Borderer, London, 1 cs. stationery.

Paper Stock.

Train, Smith & Co., Borderer, London, 64 bs. waste paper.
C. A. Cheney, by same, 119 bs. waste paper.
T. F. Ring, by same, 62 bs. waste paper.
Wheelwright Paper Company, by same, 101 bs. waste paper.
Crocker, Burbank & Co., by same, 305 bs. waste paper.
J. B. Moors & Co., by same, 253 coils manillas, 180 bs. flax waste.
True & McClelland, Bostonian, Liverpool, 27 bs. new rags, 26 bs. waste paper, 24 coils manillas.
True & McClelland, Norseman, Liverpool, 60 bs. waste paper, 84 coils manillas.
R. H. Overton & Son, by same, 154 bs. manillas.

Bleaching Powder.

J. L. & D. S. Riker, Norseman, Liverpool, 70 cks.
A. Klipstein, Bostonian, Liverpool, 15 cks.
Jerome Marble & Co., by same, 15 cks.
J. L. & D. S. Riker, Georgian, Liverpool, 384 cks.

Soda Ash.

Wing & Evans, Gallia, Liverpool, 93 cks.
Warren & Co., Norseman, Liverpool, 199 cks.
Wing & Evans, Bostonian, Liverpool, 47 cks.
F. E. Addeux, by same, 35 cks.
Churchman & Co., by same, 27 cks.
J. L & D. S. Riker, by same, 600 bags.
Wing & Evans, Georgian, Liverpool, 79 cks.
Morey & Co., by same, 34 cks.

Soda Crystals.

Warren & Co., Norseman, Liverpool, 140 bbls.
Order, Gallia, Liverpool, 140 bbls.

Crude Sulphur.

Linder & Meyer, Bostonian, Liverpool, 1,336 bags.
Linder & Meyer, Georgian, Liverpool, 1,336 bags.

Sizing.

J. L. McClintock, Gallia, Liverpool, 118 bags.

PHILADELPHIA IMPORTS.

FOR THE WEEK ENDED JUNE 16, 1894.

Books.

Vandegrift & Co., Lord Gough, Liverpool, 18 pkgs.

Paper.

A. Hartung & Co., Barmen, Hamburg, 13 cs.
Chas. Beck Paper Company, by same, 21 cs.
Same, Lord Gough, Liverpool, 11 cs.

Paper Stock.

John T. Bailey & Co., Corean, Glasgow, 61 bs. bagging.
Bank of British North America, Lord Gough, Liverpool, 104 bs. bagging.

Caustic Soda.

J. Lee & Co., Lord Gough, Liverpool, 50 drums.

Soda Ash.

Brown Brothers & Co., Lord Gough, Liverpool, 77 cks.
Order, by same, 116 bbls.

Bleaching Powder.

Order, Corean, Glasgow, 86 cks.
Same, Barmen, Hamburg, 61 cks.

Soda Crystals.

J. I. Keefe, Lord Gough, Liverpool, 280 bbls.

Bichromate of Potash.

J. L. & D. S. Riker, Corean, Glasgow, 30 cks.

Sulphur.

Order, Hexham, Mediterranean ports, 300 tons.

EXPORTS of Paper, &c., from New York for the Week Ended June 16, 1894.

BOOKS, cases, to British West Indies, 1; British Australasia, 3; Mexico, 2; Colombia, 4; Southampton, 1; Cuba, 1; London, 2; Hamburg, 4; British possessions in Africa, 10; Chili, 1; Central America, 1; Leipsic, 7; Liverpool, 11; Stuttgart, 1; Siam, 1.

PAPER, to Cuba, 548 pkgs.; British West Indies, 578 pkgs.; Venezuela, 4 cs.; London, 316 cs.; Liverpool, 33 pkgs.; British Australasia, 4 pkgs.; Central America, 27 pkgs.; Bremen, 45 cs.; British possessions in Africa, 2 cs.; Antwerp, 14 cs.; Brazil, 1 cs.; British Guiana, 65 pkgs.; Canada, 16 cs.; Colombia, 30 pkgs.; Chili, 28 pkgs.; Gothenburg, 25 cs.; Hull, 17 cs.; Hayti, 7 pkgs.; Hamburg, 17 cs.; Peru, 4 pkgs.; Mexico, 4 pkgs.; Rotterdam, 20 cs.; Southampton, 9 cs.

STATIONERY, cases, to Colombia, 11; London, 21; Liverpool, 1; British West Indies, 2; Central America, 3; Antwerp, 1; Beyrout, 1; British possessions in Africa, 1; Chili, 52; Ecuador, 1; Hayti, 8; Hamburg, 4; Peru, 6; Mexico, 12; Siam, 2; Nova Scotia, 1.

CARDBOARD, packages, to Cuba, 4; British possessions in Africa, 1.

STRAWBOARD, cases, to Cuba, 12.

PAPER STOCK, bales, to Hamburg, 4.

AGGREGATES AND VALUES.

Paper, reams.....	—	—
Paper, pkgs.....	1,873	$5,215
Paper, cases.....	441	4,154
Books, cases.....	40	3,191
Stationery, cases.....	129	11,370
Rosin, bbls.....	2,746	7,419
Totals.....	4,738	$31,349

Exports General Merchandise for the week ended June 19, 1894..... $6,446,940

Cylindrical Paper Boxes.

A new method of making cylindrical paper boxes, having for its object greatly to facilitate and expedite such work, is carried out by means of a roller of suitable diameter and length, having two oppositely located longitudinal grooves. One edge of a sheet of paper or strawboard is inserted in one of the grooves and bent down to form a flange; the paper or board is then rolled once around the roller, after which the surface of the paper or board is pasted or sized and then rolled until the whole sheet has been rolled up; it is then laid aside to dry. When the material has become sufficiently dried, a longitudinal slit is cut in the paper cylinder, by carrying a sharp knife along in the groove opposite to the groove having the flanged edge of the paper inserted, with sufficient force to sever the paper cylinder. A strip of cloth or tape, gummed or pasted, is then applied over the slit in the cylinder for the purpose of making a hinge; when this has become sufficiently dried a slit is cut along the paper cylinder on the opposite side to the hinge, by carrying the knife in like manner for cutting the other slit, taking care, however, not to cut off the flange, but carry the knife along the side of it so as to leave the flange on the edge of the half cylinder. These cylinders are then cut into required lengths for boxes, and heads are put in the ends of these blanks to complete the boxes, which may be finished off in any suitable manner.

TRAIN, SMITH & CO.,
IMPORTERS OF AND DEALERS IN
—ALL DESCRIPTIONS OF—
Paper Makers' Supplies,
24 FEDERAL STREET, BOSTON,
BRANCH OFFICES: 36 BEEKMAN STREET, NEW YORK. 21 ST. MARY AXE, E. C., LONDON. EDMUND ST. CHAMBERS, LIVERPOOL.

WM. J. CORBETT & CO.,
WHOLESALE DEALERS IN AND PACKERS OF
Woolen Rags and Paper Makers' Supplies,
86, 88 & 90 COVE ST., BOSTON, MASS.
WOOLEN RAGS GRADED IN COLORS AND QUALITY.
OUR SPECIALTIES: "EXCELSIOR" AND "STAR" PACKINGS.

ESTABLISHED 1855.
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— IMPORTERS AND PACKERS OF —
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ALSO IMPORTERS AND DEALERS IN
MARINE BLUE (Aniline) for News Paper Mills,
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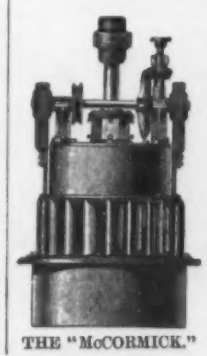
CASTLE & GOTTHEIL,
— IMPORTERS OF —
Sulphite and Soda Pulps,
LINEN AND COTTON RAGS,
JUTE STOCKS, SIZING, &c.
140 NASSAU STREET, — NEW YORK.

AMERICAN STRAW BOARD CO.
ORGANIZED JULY 1, 1889. CAPITAL, $6,000,000.
Manufacturers of Straw Boards, Pulp Lined Boards,
Lined Straw Boards, Combination Boards, Binders' Boards,
"LIGNISTRA." Friction Boards, Building Board, Plain Board, Tarred Board, Waterproof Boards, Barrel Layers, Peach Baskets, Egg Cases and Fillers.
General Office, PULLMAN BUILDING, CHICAGO.
AGENCIES: New York, 102, 104, 106 Wooster St. Boston, 45 Federal St. Philadelphia, 121-127 N. Fourth St. Cincinnati, 101-103 Walnut St, Chicago, 152-153 Michigan Ave.


THE "McCORMICK."

McCORMICK AND SUCCESS TURBINES,
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The McCORMICK Turbine gives more power per diameter with a higher percentage of useful effect from the water used than any other water wheel heretofore made. All sizes, both right and left hand, tested in the Holyoke testing flume.
The SUCCESS Turbine, long and favorably known in the paper trade as a first-class water wheel, possesses valuable features found in no other turbine, and gives a high percentage of useful effect from the water used.
THE McCORMICK and SUCCESS TURBINES are especially adapted for driving Paper and Pulp Mills and are extensively used by the largest manufacturers in the United States and Canada. Parties using wheels which are unsatisfactory and those contemplating the improvement of powers will find it to their interest to confer with me, as I am willing to guarantee results where others have failed, no matter what make of turbines has been tried.
State requirements and send for catalogue.
Heavy Power Transmitting Machinery a Specialty.
S. MORGAN SMITH, York, Pa.

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The Paper Trade Journal.

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NEW YORK: SATURDAY, JUNE 23, 1894.

"THE CHEMISTRY OF PAPER MAKING."

OFFICE OF STATE ASSAYER.
Boston, June 20, 1894.

Messrs. Howard Lockwood & Co., 126 Duane Street, New York, N. Y.:

DEAR SIRS—I beg to inform you that I have to-day completed chapter ten of "The Chemistry of Paper Making," and this, together with the appendix, will go to the printer to-morrow morning. All the matter now in type is indexed, but I cannot of course complete the index until I receive proofs in pages of this last lot of copy, and I shall also want to add one or two tables to the appendix. This will be ready as soon as the first proof is received.

With regard to the appendix I must ask you to bear in mind that it consists almost entirely of tabulated figures and that it will be impossible to read proof quickly. Yours very truly,

A. D. LITTLE.

AN improvement in beating engines is described on the first page of this issue of THE PAPER TRADE JOURNAL. It is believed by the inventor that the form of construction in this engine insures more thorough beating of the stock. The knives on the roll are set with a twist or spirally, while those in the bed plate are of the usual form, lying parallel to the axis of the roll.

THE eight-hour day statute of Nebraska has been declared unconstitutional by the Supreme Court of that State, on the ground that it is class legislation, in view of the exemption of farm laborers, and that it denies the right of parties to contract with reference to compensation for their services. A working day which does not include all labor and a law which denies the right of private contract do not seem calculated to meet any long felt want.

THE prestige which American papers have acquired in foreign markets is strongly set forth in an interview with a member of the German paper trade, which we print in another column. We commend the suggestions there given to the attention of our manufacturers. The views expressed are exactly in line with what we have urged upon the trade for years, and we reiterate our belief that the export trade needs only proper care and attention to become a very substantial reality.

Notice of the annual meeting of the American Paper Manufacturers' Association appears in another column. There may be something more for the organization to do than the regular function. There are matters which should have consideration, among them the proposition of the members of the Western trade to reduce the output—a movement which, we think, it would have been better to have originated or at least proposed in the association rather than to have made it under the auspices of a local or sectional organization, and through an independent executive committee. At present it is questionable whether this proposition to shut down for part of the time during July will be largely favored by the Eastern mills.

THE building of inter-urban lines of electric railways seems to be arousing attention to their possibilities as freight carriers in competition with the steam roads. It is an interesting question which may prove of no small importance in the matter of short distance transportation. It is said that requisitions for both box and open cars have already been made by some of the electric railway companies on car manufacturers, and the demand is being supplied as fast as possible. That such roads will prove useful to farmers living along their lines in marketing their produce there can be no doubt, and possibly therein lies the solution of the local freight problem also, which for years has been a burning question in all controversies about differential rates on short distance traffic. In any event the shipper is liable to get the benefit of competition.

THE latest report of the Bureau of Statistics, which covers the ten months from July 1, 1893, to April 30, 1894, shows a notable and gratifying increase in the exports of manufactured goods, the value of which exceeded that of any corresponding period ever before reported. In round numbers these exports are valued at $184,000,000, or 20.3 per cent. of the total, and this amount compares with $158,023,000 (19 per cent. of the total) for the full fiscal year 1892–3; $158,511,000 (15.6 per cent. of the total) for the year 1891–2, and $168,927,000 (19.4 per cent. of the total) for 1890–1. The increase is distributed over a large variety of articles, and the greatest gains have been made in the trade with the South American Republics and China and Japan. It is to be hoped that this condition of affairs in our foreign trade is to be permanent and progressive. It should be. Our resources are unequaled and our advantages in the business of manufacturing are numberless; what is needed more than anything else just now is a wider and steadier market.

To follow, in these fine days when the mercury is flirting with the 90's, the winding mazes of the tariff discussion is almost too much to expect of perspiring humanity. We have already printed the stationery and paper schedules several times, but the end is not yet. We hope, however, that the long drawn out agony is nearing a close. People are in a mood to accept anything rather than have the session of Congress prolonged, the prevailing feeling being that there can be no greater deep for trade and commerce to reach, while the public mind is insufferably weary and disgusted with the scandals which have smirched the present Senate beyond any apparent power of self-rehabilitation. We give in another column the latest schedules as passed by the Senate. These may be again changed when the bill is considered by the full Senate, and again when the inevitable conference committee gets hold of it. The outlook makes one tired, truly; but maybe the heat of these torrid days will lubricate the Congressional machinery and make matters move more swiftly.

THE falling off of immigration for the first five months of the year is as remarkable as it is gratifying. In the same period of 1893, 174,719 immigrants landed at the port of New York; this year the number reached only 76,384. In April, 1893, 75,261 landed, while in the same month this year 36,099 arrived. In May, 1893, 73,006 were brought over, while in May of this year only 22,832 reached our shores. For the ten months ended May 1 the decrease was 80,082. At this rate the decrease for the full year would be at least 25 per cent., and will probably exceed that amount. Undoubtedly the business depression has had much to do with this limitation of immigration; nevertheless, it will prove a good thing for the country. Other parts of the globe are proving attractive to immigrants just now, and the stream, once turned in other directions, will probably never be changed this way again with the force and dimensions of former years. There was a time when the country needed help to develop its resources; the case is different now. Causes and methods which need not here be named have operated to swamp our unskilled labor market under a deluge of most unquestionably undesirable people. The supply was altogether in excess of the actual needs of the country; it could not be assimilated and, worse still, did not wish to be, but desired to remain alien. In an ordinary and normal condition of business a certain amount of new blood is needed and desirable, and can readily be taken up by the body politic. There should, however, be a thorough overhauling of the immigration and naturalization laws, not only in the interests of American labor, but as a conservator of good citizenship and public morals.

THE old saying that "figures never lie" is not entirely borne out by the census returns of 1890 in so far as they relate to wages. The figures seem to indicate that in the ten years from 1880 to 1890 the number of employees increased 66 per cent., and that the increase in the total amount of wages paid was 131 per cent. From this it is easy to draw the conclusion that wages generally were practically twice as high in 1890 as they were ten years before. One has only to use his eyesight and common sense to see that this is really not so. For the great mass of working men wages have had for some years a downward tendency; since 1890 this has been too plainly the case save in a few high-grade industries employing high-class, expert workmen. The truth of the figures may be found, however, not in their general application to all classes of labor; but in the higher and higher rewards given to exceptional ability. The general tendency to organize business into stock companies, and in productive industries to concentrate the various branches of manufacturing into one immense plant, divided into departments, with responsible, executive heads, to whom large salaries are given, in a degree explains the apparent increase in average wages. In all kinds of business there is a disposition to specialize, to divide into departments, and to increase the personal responsibility of foremen, superintendents and heads of departments. For all of this work good, executive ability is in demand, the demand no doubt being continually in excess of the supply, as it takes time and experience to develop this quality in men, and to enable employers to discover it and make it available. It needs only a little searching among the figures to show how much this high class of employees has grown within the last ten years, and the constantly upward tendency of its reward. More and more owners of great industries are disposed to shift the burdens of business to the shoulders of paid employees, and generally they are willing to pay well for the relief which they experience. The philosophy of this upward tendency of wages in one department of labor, and the downward trend in another is simple enough. An inefficient workman in a subordinate position may reduce the general efficiency of the establishment by a trifling amount, but an incapable superintendent, foreman or manager will waste all of the resources of the concern and may damage its reputation in trade irrecoverably; hence, big pay for good men.

Watermarks.

BY DANDY.

So the American Paper Manufacturers' Association is going to meet in Saratoga, and the date is again the last Wednesday in July. Such being the case it behooves every man who is going there to pray constantly that during that week there may be icicles hanging from the edges of the balconies, and that a snowstorm may come along by way of surprise.

Two years ago Saratoga in the daytime reminded one who looked at the thermometer of the old Presbyterian subterranean hereafter, while at night, with its "club," &c., it seemed like "Hades up to date."

As the association has been in retirement for some time it ought to have saved up energy enough to make things hum this year, and every body ought to be on hand to see just what the developments will be.

Speaking of Saratoga reminds me of hotels, and they in turn remind me of the notice posted in an Alpine hotel frequented by English tourists, and which read as follows:

"In this hotel the wines leave the traveler nothing to hope for."

Not so with Saratoga. It's the bills for the wines and other things which leave the traveler nothing to hope for.

The very latest agony in paper is a carpet. A member of the trade has both his office and his house carpeted in this way. The carpet is made of tissue paper spun into cord, and the cord in turn woven into carpet.

Which reminds me, why doesn't the A. P. M. A. at its Saratoga meeting get up an exhibition of all of the various articles into which paper is manufactured? It would be interesting to see the possibilities of paper and pulp.

It would go alongside of the exhibition of supplies, machinery, &c., which was made two years ago, and which it is to be hoped will be made this year. Come, now, Brer Barker, whoop it up.

Sometime ago there was a great cry that the foreign thin papers, such as copying, carbon, manifold, &c., were top of the heap, and could not be competed with by the product of American mills. However, the Yankees are getting there very rapidly and there are some very pretty papers coming off American machines.

The Chemical Fibre Association had its regular monthly meeting here this week and did the usual amount of business. The reports showed that trade was very fair.

Trade Talks.

Erich Bauer, Hamburg, Germany.—I noticed in a recent issue of the Berlin *Papier Zeitung* a communication sent in by a London correspondent which said: "Paper manufacturers and dealers agree that business has never been so bad as at present, and that Germany's paper trade is particularly unfavorable. The prediction, so frequently and impressively advanced, that American and Scandinavian papers would eventually drive German paper out of the markets of the world, has already been partly realized. We are no longer able to compete with the nations mentioned in printing paper, although this was formerly our principal article of export, and up to a few years ago we controled the markets of this country. Scandinavian and American papers are in the lead and German paper is no longer even considered. Swedish, Norwegian and Finnish paper manufacturers have gradually learned how to make good paper; and cheap wood, low freight rates and comparative freedom from State and local taxation enables them to sell their product at a very low figure. The same conditions exist in the United States, and as the home market of that country at present does not consume all of the paper produced, the surplus, it seems, is thrown on our market by a combination of printing paper manufacturers, formed in New York. To this must be added the fact that American paper is well liked here, and that it is apt to gain a permanent footing. Every new measure which tends to increase the cost of production of German paper, be it taxation or a reduction of labor or anything else, renders the German paper maker less able to compete with others in the markets of the world, and it is quite likely that other grades of paper will meet the same fate in the course of time."

Commenting on this Mr. Bauer said: I have for several years represented some of the most prominent German and Belgian manufacturers of printing paper, and have paid yearly visits to all South and Central American countries and Mexico. I am well able, therefore, to testify to the correctness of the statement in the *Papier Zeitung*. Germany formerly controled the entire paper trade of the American continent, south of the United States, but I must confess that the German paper maker is no longer in the race; he cannot compete with the prices of Scandinavian and American paper. Swedish and Norwegian paper, although cheap enough, is vastly inferior to American printing paper, and the Spanish American consumer is well aware of this fact. He prefers American paper and stands ready to adopt it, and there is no reason why American paper makers should not control and eventually even monopolize the printing paper trade of Spanish America. Before they can succeed in this they must, in my opinion, make certain reforms in their present methods of doing business in these countries. The men usually sent there to represent American paper manufacturers, although experts in everything pertaining to paper and able perhaps to speak the language of the country—a very important feature, by the way—are as a rule not sufficiently acquainted with the customs of the country and the business methods of the people. In the first place they have different weights and measures from those used in the United States. Most of those countries have adopted the French metric system; the kilogram and metre are their units of weight and measure, and merchants prefer to purchase their goods and have them invoiced according to this standard. The sizes of printing paper used also differ in many cases from those generally used in the United States, and I must say that the average American salesman is not near so ready to accommodate his would-be customer in this respect as his European brother. Instead of catering to his customer's wishes and give him precisely what he wants, he will try to sell him what he sells to his customers in the United States and tries to get him to buy something that he does not want. Another source of complaint are faultily or carelessly drawn custom house documents, which give the importer trouble and frequently cause fines to be imposed. The most serious drawback to American trade in Spanish-American countries consists, as I have found, in the bad and careless packing of printing paper sent out by American exporters. Those countries do not yet enjoy rail communication between their ports of entry and the larger cities and towns of the interior, and merchandise has to be transported in wagons and often on the backs of mules over rough country roads, and is naturally subjected to a great deal of rough handling. Instead of putting up their paper for those markets in small sized handy bundles, packed between stout boards on top and bottom and the sides, and bound by hoop iron or strong wire, as is done in Europe, the American exporter usually packs it in the same manner he would for shipment by rail within the United States. The paper thus packed merely in bagging tied around with ropes, arrives at its destination in a dilapidated condition, and not infrequently half of the paper is spoiled or unfit for use. Another important reform to be made by American exporters before they can acquire the trade of those countries consists in extending the time for payment; that is, in selling on long credit. While there are many importers, it is true, quite ready and willing to pay on arrival of the paper, or on receipt of the shipping documents and samples, the majority, and it must be understood good and solvent firms, prefer to buy on three to six months' time, paying the usual interest of course, and European exporters are always ready to deal with them on this basis. The American merchant or manufacturer, as a rule, is reluctant to do business on these terms, and this accounts to a great extent for the fact that comparatively little American paper is sold in Spanish American markets. It would of course be a difficult matter for any one firm alone to do an extensive business on this basis, as it requires considerable capital; but if a few manufacturers of different grades of printing papers were to combine and send out able and experienced representatives, they would undoubtedly, as I have already stated, acquire the largest share of the trade of those countries, and that trade is far larger than most American producers now have any idea of, and is growing from year to year.

Col. W. W. Page, Poland Paper Company, New York—I think that the general couditions of trade have improved, and for one thing, we are now nearer the point at which there is bound be be a rise. Yesterday I was speaking with a dry goods man. He said that people were now beginning to pay promptly. They were out of stocks, and as a rule they were out of debt. In the paper trade, mills which have been making a reliable uniform grade of product have not been suffering for orders Take our own case for example. I became connected with the paper business thirty-two years ago and in that time it has grown amazingly. In the Poland mill we will make 30 tons of book paper on one floor when the machinery is all up. We have four machines, twenty engines and six stacks of super calenders. There is not in this country a plant like it running all on one grade of paper. No, we do not make our paper of soda fibre exclusively. We use about one-third rag stock and make a good article of uniform quality. That is why we are busy. We are supplying paper to a large number of standard publications, who are taking about the same quota of paper right along. Of course with the extension of the paper business prices have fallen. Why, I remember that during the war news paper sold at 30 cents a pound, while book paper sold at 20 cents. The demand was for newspapers and not for books. When S. D. Warren and H. M. Clarke separated, the

former taking the mill and the latter the store on Milk street, Boston, there was a great call for news paper. Mr. Clarke bought up all of the book paper of various sizes which he could find in Boston and New York, and sending it to Mr. Warren had it made over into news paper, and realized a handsome profit on it. A man who is now one of the prominent manufacturers of the country was then in business. Morey & Co., of which firm I was a member, hesitated about selling him. In about three years after that the income tax came into operation, and that manufacturer paid a tax on $100,000 income, which gives you an idea of the large amount of money made in those days. Do I think that the jobber is being forced out of business? I think that the jobber never had as good a chance as he has had this last year, for the reason that he has not hesitated to cut prices where he found a man who wished to buy, and he has not hesitated to throw out enough bait to take the order, even if he had to knock off a half a cent. With that order in his hand he has been able to find a mill whose necessities were so great that it was willing to take the order and allow him 5 per cent.; so that the jobber has been peculiarly well situated during the past year. That condition of affairs, however, is only temporary, for the large consumer of paper always feels that in buying from a jobber he is paying out money he could save were he to buy from first hands, and the result is that the large consumer finally buys of the manufacturer. It is so in the paper trade and in all other trades. Some mills, however, cannot sell to the consumer. They are built on borrowed money, and they cannot wait for a settlement with the consumer. They want to ship the paper and draw for three-quarters of its value on the same day, so as to be able to meet their obligations. Such mills have to sell to the jobber.

Communications.

A New Complaint.

Editor of The Paper Trade Journal:

I have been selling paper for the past fifteen years and have had all kinds of fault found by customers, such as too much wood, or too many old papers, or not enough rags, froth in the paper, too specky or dirty, short count, short weight, and other complaints innumerable; but I had a complaint this week, made by a paper house in Washington, D. C., whose manager has just been blessed with twins—a boy and girl—which was very surprising. The complaint was not about the twins, but it was that a half pint whiskey flask had been found in a bundle of paper.

The man who runs the paper cutter in this customer's store says that it has happened twice; at one time a lot of the paper was under the cutter and when he cut through it, pieces of glass flew around him, and then he discovered the broken flask and a dent in the edge of his knife. Next!

BOOK.

Unbleached Sulphite.

WOOLSTON, England, June 4, 1894.

Editor of The Paper Trade Journal:

In THE PAPER TRADE JOURNAL for May 19 is a notice by "Dandy" that a paper maker testified that a document written in 1881 was spurious because it contained unbleached sulphite pulp, which he says was not used for paper making before 1884. This is a mistake on the paper maker's part, and I inclose a sample of paper made in April, 1881, under my own superintendence, out of unbleached sulphite pulp made by my process and containing no other fibres of any kind.

As it perhaps may interest you to see what now can be done in Europe, I inclose a sample of cigarette paper containing over 50 per cent. of bleached sulphite pulp made by an improved process of my own.

C. D. EKMAN.

American Paper Manufacturers' Association.

OFFICE OF SECRETARY,
BOSTON, June 20, 1894.

Editor of the Paper Trade Journal:

On behalf of the Executive Council a cordial invitation is hereby extended to all paper and pulp manufacturers to attend the annual meeting and banquet to be held at the Grand Union Hotel, Saratoga, on Wednesday, July 25, 1894, as per notice this day issued to members of this association.

WILLIAM T. BARKER, Secretary.

Following is the notice above referred to:

OFFICE OF SECRETARY,
BOSTON, Mass., June 20, 1894.

The seventeenth annual meeting of the American Paper Manufacturers' Association will be held at the Grand Union Hotel, Saratoga, N. Y., on Wednesday, July 25, 1894, at 10:30 o'clock A. M., to hear the reports of the various officers and committees, to elect officers for the ensuing year and to transact any other business which may properly come before the meeting.

Members will dine together promptly at 6:30 o'clock P. M. Tickets will be necessary for admission to the dinner, and can be obtained at the hotel. Members are reminded that they may bring guests to the banquet by notifying the secretary in advance and procuring tickets for them.

It is especially important that the committee be informed, at least one week in advance of the meeting, of the number expecting to be present, and you are earnestly requested to fill out the inclosed blank and return to the secretary, whether you intend to be present or not.

Your attention is called to the invitation, extended through the columns of the trade journals to all paper and pulp manufacturers, to join with us on this occasion, and your co-operation in securing their attendance is respectfully requested.

The same reduced rates of charge per day have been secured from the Grand Union Hotel for all guests purchasing tickets to the banquet as were obtained for 1892. Per order Executive Council,

WILLIAM T. BARKER, Secretary.

Changes, Removals and New Firms.

The *Record* is a new paper published at La Salle, Ill.

The *Free Lance* is a new paper published at Alton, Mo.

The *Press* is a new paper published at Ripley, N. Y.

Bub & Co., stationers, St. Joseph, Mo., have sold out.

J. D. Hagadorn, publisher, Lebanon, Kan., has sold out.

The *Chronicle*, Clarksville, Va., is a new paper just started.

L. H. Hollowell, printer, Nashville, Tenn., has sold out.

The Filley, Neb., *Review* has been removed to Narka, Kan.

The *Banner of Gold* is the name of a new Chicago publication.

The daily *Union-Herald* is the name of a new paper at Circleville, Ohio.

The Memphis *Appeal* Company, publisher, Memphis, Tenn., has sold out.

A new Populist paper has been started at Burchard, Neb., by E. D. Howe.

The *Morning Dispatch* is the name of a new paper published at Sidney, N. Y.

I. W. Litchfield, Warwick, N. Y., has sold his interest in the Warwick *Dispatch*.

The *Citizen* is a new paper at Milford, Conn., published by Richard H. Fitch.

The Toledo Paper Company, wholesale paper dealer, Toledo, Ohio, has sold out.

W. L. Arnold, printer, Nashville, Tenn., has been succeeded by W. L. Arnold & Co.

The *Enterprise* is a new paper published at Lometa, Tex., by Jefferson Funderburk.

The *Times*, Quakertown, Pa., has been sold to Horace S. Heist and A. Byron Conway.

The Dexter Folder Company, Fulton, N. Y., has removed its plant to Pearl River, N. Y.

The *Free Press* is a new paper published at Princeton, Ind., and edited by W. H. Evans.

Sander & Neulandt, manufacturers of albumen paper, Jersey City, N. J., have dissolved partnership.

The Palmyra (N. Y.) *Journal* is a new paper published by the *Journal* Printing Company of that city.

The *Times-Standard* Publishing Company, Newark, N. J., has been incorporated. Capital stock, $300,000

The German-American Publishing Company, Los Angeles, Cal., has been incorporated. Capital stock $10,000.

D. C. Connell, Findlay, Ohio, has bought back the book and stationery business which he sold last year to A. E. Paagle.

The Swedish Co-operative News Company, St. Paul, Minn., has been incorporated to publish a Swedish paper.

Alice J. Smith, Auburn, N. Y., has purchased the *Bulletin* and the *News and Democrat*, published in that city.

The P. E. Wissler Company, Richmond, Ind., has been incorporated to publish a newspaper. Capital stock, $5,000.

A half interest in the *Free Press*, Kansas City, Mo., has been purchased by James M. Mickey, of Leavenworth, Kan.

The Bayside Publishing Company, Bayside, N. Y., has been incorporated to continue publishing the *North Shore Review*.

The Darlington Printing and Publishing Company, Darlington, S. C., has been incorporated to publish a newspaper. Capital stock $1,000.

The *Evening News*, Macon, Ga., has been purchased for $5,000 by Mrs. C. P. Moore, mother of the editor, who held a mortgage on the plant.

The *Telegraph* Publishing Company, Los Angeles, Cal., has been incorporated to publish a newspaper called the *Evening Telegraph*. Capital stock $40,000.

The *Deutsch Zeitung*, Vinton, Ia., has been removed to Cedar Rapids, Ia., where its publication will be continued under the name of the Cedar Rapids *Germania*.

The General Advertising Company, San Antono, Tex., has been incorporated by J. S. Irvine, James Simpson and J. H. Wurtz. Capital stock, $10,000.

H. B. Garrett's interest in the Vance-Garrett Printing Company, Jacksonville, Fla., has been purchased by J. G. Nixon, who will organize a stock company to continue the business.

The Roanoke *Times* Publishing Company, publisher of the *Times*, Roanoke, Va., has been succeeded by the Roanoke Publishing Company. W. H. H. Downey is president, and C. A. Fisher secretary-treasurer. Capital stock, $25,000.

The Washington *Times* Publishing Company, Washington, D. C., has been incorporated to publish a daily newspaper. C. G. Conn is president, J. H. Ralston, Hyattsville, Md., treasurer, and Frank H. Padgett, secretary. Capital stock, $50,000.

The *Call* Printing and Publishing Company, Lincoln, Neb., has been incorporated. Capital stock $25,000. The company secured a bill of sale of the *Call* plant and franchises for $12,000.

A new paper called *Insurance Opinion* is published in New York. It will be devoted to the work of giving insurance news, and its distinctive feature will be an epitome of the opinion of the insurance press.

The Rooney & Otten Printing Company, of New York, has been incorporated with a capital of $18,000. The directors are: John H. Otten and John Doscher, of Brooklyn, and Elizabeth Rooney, of New York.

The *Mayflower* Publishing Company has been incorporated to publish a magazine known as the *Mayflower* in Floral Park, N. Y. Capital, $100,000. The directors are John L. Childs, W. Herbert Tilton and others.

The Deknatel Company has been incorporated to manufacture paper boxes and novelties in New York. Capital, $10,000, and directors, Herman A. Deknatel, Edward J. Wilkins and Charles I. McLaughlin, of New York.

The United States Metal Box Corner Company, Atlanta, Ga., has been incorporated by Mr. Adler, of New York, Albert A. Wood and Albert P. Wood. Paid in capital $10,000, with privilege of increasing it to $200,000.

The *Storiettes* Publishing Company, New York, has been incorporated with a capital of $50,000, and directors, William Philip Robinson, of New York; John Habberton, of New Rochelle, and Joseph Lawrence Cooke, of Brooklyn.

A forthcoming periodical devoted to the interests of graphic art will be known as *Art Education*. J. C. Witter and C. P. Traner will be the editors, and it will be published in New York city by the Graphic Education Publishing Company.

The Patriotic Publishing Company has been incorporated to publish a newspaper to be known as *The American* in Syracuse, N. Y. Capital, $3,000, and directors, Elmer E. Clark, Martin J. Lee, A. L. Crandall, Robert P. Zobel, Edgar F. Otis and Charles M. Grannis, of Syracuse, and E. A. Watkins, of Brooklyn, N. Y.

Failures.

Hallock Brothers, paper box manufacturers, Danbury, Conn., have made an assignment to W. R. Miles.

The schedules of Frank B. Hobart, dealer in twines, at 92 White street, New York, show liabilities of $10,036, nominal assets $10,096, and actual assets of $8,164.

The Phœnix Tissue Mill Company, manufacturer of paper, Phœnix, N. Y., has made an assignment. The mill was formerly owned by the United Paper Company and has been operated by the present concern a short time only.

W. T. Durbin has been appointed receiver for the Anderson Paper Company, Anderson, Ind. This step, it is said, was rendered necessary by the hostile attitude of foreign creditors of the company, who had shown a disposition to press claims held by them. Suits have been brought by these creditors in the United States District Court at Indianapolis, but it is believed that the receivership made upon the solicitation of George Mickal and others will obstruct action in the Federal court. Receiver Durbin has given a bond for $150,000. The company is rushed with orders, and will ask the court to permit the plant to continue operations.

Fires.

J. Walton, Mooney & Co., stationers, 151 E. 125th street, New York, were burned out on June 19. Loss, $3,000.

William T. Barran & Co., printers, bookbinders and paper box manufacturers, Norfolk, Va., were burned out June 15. Loss, $5,000; insured.

At Lerna, Ill., on June 18, the office of the Lerna *Quiz*, a local paper, including the household effects of William Woolen, its editor, were destroyed by fire.

At Flint, Mich., on June 17, lightning struck the rag warehouse occupied by Geo. M. Spear. The building was owned by H. H. Hudson and insured for $1,200. The stock owned by Mr. Spear was partially insured. Total loss, $2,000.

Market Review.

OFFICE OF THE PAPER TRADE JOURNAL,
FRIDAY, June 22, 1894.

THE MONEY MARKET.—The stock market is quiet, and most of the moving shares closed at lower figures. The call loan market was easy at 1 per cent., with small inquiry for accommodation among houses carrying stocks whose loans are not now frequently called. The usual rate is 1 per cent. at the Stock Exchange, and seldom over 1½ per cent. in the outside market. Time loans were quiet, with a small inquiry. The rates were 1 per cent. for thirty days, 1½ per cent. for sixty days, 2 per cent. for ninety days to four months, 2½ per cent. for five months and 3 per cent. for longer dates. Commercial paper of the best class was in good demand. Rates are 2½ per cent. for choice acceptances, 3¼@3 per cent. for sixty to ninety day indorsed bills receivable, 3 per cent. for four months' commission house names, 3½@4 per cent. for prime and 4½@5½ per cent. for good four to six months' single names. The supply of choice names is light. The market for foreign exchange was firm, particularly for Continental bills, which were influenced by higher discount rates abroad. Posted rates were $4.88½ for sixty days and $4.90 for sight. Actual rates were $4.87½@4.88 for sixty days and 4.88¼@4.89½ for sight.

THE PAPER TRADE.—The market continues along in about the same way as it has for some time, and none of the grades show any particular features. There is a moderate movement in Writings, and some of the Book mills report a better supply of orders, several stating that they are as busy as they can well be. In News some machines have been shut down because of the low prices which rule. Tissue papers have been crowded down in price, and one mill, which has only been running a few months, has made an assignment.

WOOD PULP.—The market for ground wood is quiet, and the output is being restricted, makers shutting down plants rather than pile up stock. The export demand has ceased for the present, the market abroad not having recovered from the recent "break," which was caused by the Norwegian makers seeking to recover lost ground. Prices here range 75@85c.

WOOD FIBRE.—The call for Chemical Fibre is of moderate proportions. In foreign there is a pressure to sell in some quarters, in order to move accumulated stocks. Some new domestic sulphite mills are being talked of, and there are indications that the product is to be increased. Domestic Soda is quoted at 2¼@3½c. for Bleached. Domestic Sulphite is quoted at 2@2½c., as to quality, for Unbleached, and 3½c. for Bleached. Foreign grades are quoted as follows: Unbleached Pine, soda process, 2.60@2.75c.; Bleached, same process, 3½@3.90c.; Unbleached, sulphite process, 2.50@3.25c.; Bleached, do., 4@4½c.; Bleached Straw Pulp, 4@4½c. Imports of Chemical Fibre this week aggregated 109 tons, being 6 tons from Bremen and 103 tons from Rotterdam.

FOREIGN RAGS AND PAPER STOCK.—The market is extremely dull and consumers are very indifferent, the annual excuse of "shutting down for repairs" coming into play just now. Imports for the week aggregated 3,978 bales and 109 tons, being 751 bs. rags, 117 bs. papers, 109 tons chemical fibre and 3,110 bs. manillas. Ports of shipment and quantities were as follows: Antwerp, 1,037 bs. manillas; Bremen, 6 tons chemical fibre; Hamburg, 60 bs. rags, 117 bs. papers, 549 bs. manillas; Hull, 414 bs. rags, 170 bs. manillas; Leith, 138 bs. manillas; Liverpool, 337 bs. manillas; London, 96 bs. rags, 102 bs. manillas: Rotterdam, 103 tons chemical fibre 179 bs. manillas; Stettin, 181 bs. rags, 598 bs. manillas.

DOMESTIC RAGS.—The market is quiet as to new orders. Prices range as they have, being 3¼c. delivered for Whites, 2⅛@2¼c. delivered for Soiled Whites, and 1@1¼c. for No. 2's.

BAGGING, &c.—The market for Gunny is quiet, and the sale reported last week at 1c. was of 500 tons to arrive. The general quotation, however, is 1.02½@1.05c. Imports of Manilla stocks for the week aggregated 3,110 bales, being 1,037 bs. from Antwerp, 549 bs. from Hamburg, 170 bs. from Hull, 138 bs. from Leith, 337 bs. from Liverpool, 102 bs. from London, 179 bs. from Rotterdam and 598 bs. from Stettin.

JUTE BUTTS—The market is featureless, and practically no business is being done.

OLD PAPERS.—The demand for goods is only moderate. We quote: No. 1 Hard White Shavings, 2¾c.; No. 1 Soft White do., strictly free from wood, 2.15c.; Soft White do., ordinary, 1⅞@2c.; Old Ledgers, 2.10c.; Solid Printed Books, 1¼c.; Mixed Shavings, No. 1, 1.20@1.25c.; Mixed Shavings, No. 2, ¼@1c.; Extra No. 1 Manillas, 1.15c.; No. 1 Manillas, ordinary, .80c.; No. 2 Manillas, .60c.; Light Book Stock, 1¼c.; Folded News, .40c.; Mixed Papers, .40c.; Commons, 25@30c.; Straw Clippings, .45@.50c.; Binders' do., .50c.

STRAW.—Prices are not strong. We quote: No. 1 Long Rye at 60@65c.; No. 2 Long Rye at 50@55c.; Short Rye at 45@50c.; Wheat at 40@45c.; Oat at 50@55c.

ROSINS.—Rosins are firm, but prices are without change. We quote: Common to Good Strained, $1.60@1.65; E, $1.80; F, $1.90@1.95; G, $2.05@2.10; H, $2.40; I, $2.60; K, $2.90@2.95; M, $3.10@3.15; N, $3.30@3.35; W. G., $3.45@3.50.

CHEMICALS.—The market for paper makers' chemicals remains quiet. J. P. Brunner & Co., under date of June 5, speak of the Liverpool market as follows: "We are still unable to report any improvement in the position of chemicals. Soda Ash is only inquired for to a limited extent, and for Leblanc makes the spot range may be nominally quoted about as follows: Caustic Ash, 48 per cent, £3 15s.@4 per ton; 57 and 58 per cent, £4 10s.@4 15s. per ton. Carb. Ash, £3 5s.@3 15s. per ton; 58 per cent., £3 10s.@3 15s. per ton—all net cash. Ammonia Ash, 58 per cent., is only in moderate demand at £3 10s.@4 15s. per ton net cash for tierces and 5s. less for bags. Soda Crystals are quoted at £2 12s. 6d.@2 15s. per ton, less 5 per cent., but difficult to move. Caustic Soda is slow of sale, as buyers hold aloof. Quotations vary considerably, according to export market, and nominal spot range is about as follows: Sixty per cent., £7 10s.@8 5s. per ton; 70 per cent., £8 10s.@9 5s. per ton; 74 per cent., £9 10s.@10 5s. per ton; 76 per cent., £10 10s.@11 5s. per ton—all net cash. For parcels under 10 tons 5s. per ton extra is charged. Bleaching Powder is in fair request but not active. Alkali Company's quotations for hardwood casks remain unchanged, ranging from £7 10s.@8 5s. per ton net cash, according to export market." Bleaching Powder is in very light call in the local market. Alkali arrivals are large, but they are mostly going forward on contracts. Caustic Soda is in fair jobbing demand, and domestic Sal Soda is in very fair movement. During the week there have been sales of 50 cks. Bleach at 2¼c.; 50 tons Soda Ash at 1⅜c.; 100 tons 58 per cent. Alkali at 1⅛c.; 100 drums Caustic at 2.82½c.; 10 cs. German Ultramarine at 17¼c.

CHINA CLAY.—China Clay is very quiet and without sales except to a small degree to satisfy immediate necessity. No attention is paid to the thought of future requirements. Spot goods are held at $12@17.50, as to quantity.

TWINES.—Trade is fair. We quote: Sisal Hay Rope, 5@6c.; Sisal Lath Yarn, fine, 9¼c., and medium, 9c.; Jute Lines, 7½c.; Jute Ready, 7@7½c.; New Zealand Hay Rope, 6¼@7¼c.; New Zealand Lath Yarn, fine, 9¼c.; medium, 8¼c. Twines—Hemp, 4½ and 6 B Russia, 12c.; 4½ and 6 A American, 12c.; 4½ and 6 D Jute, 9½c.; 4½ and 6 L Jute, 9c.; Hemp Ball, 18 B C, 17c.; 18 C, 15c.; Russian Hemp Hay Rope, 9c.

COAL.—Anthracite is without any activity. In regard to Bituminous, there is still said to be a moderate supply and the settlement of the strike has developed the fact that there was a great deal more coal at command than had heretofore been admitted. There is a feeling that the strike will be out of the way before the end of the month.

EDWIN BUTTERWORTH & CO.,
MANCHESTER ENGLAND,
PACKERS OF ALL KINDS OF
Paper Stock, Cotton Waste and Buffalo Sizing,
Wood Pulp, Moist and Air Dry Pulp,
Soda and Ground Pulp,
83 GUNNY BAGGING, &c.
OFFICE IN NEW YORK:
Vanderbilt Building, No. 132 Nassau Street,
JAMES PIRNIE,
A. S. DEMAREST, Managers.

WATERBURY
Felts and Jackets,
MANUFACTURED BY
H. WATERBURY & SONS CO.,
ORISKANY, N. Y.
Adapted to *every* grade of paper, from the *finest* to the *coarsest*.
The Largest Manufacturers of Paper Makers' Felts in the World.
Our wet machine or pulp felts are *unequaled* for *durability*.
For WRITING and LEDGER PAPERS We warrant a felt equal to anything imported.

Wants and For Sale.

Twenty-five words or less, one dollar each insertion. Over twenty-five words, four cents a word each insertion, up to eighty words. Cash should accompany order.

Over eighty words, or displayed advertising, will be charged for by the inch, according to our regular schedule of rates.

Answers can come in our care and will be promptly forwarded without extra charge.

WANTED—SITUATION AS FOREMAN IN book, news or manilla mill; long experience on jute, sulphite and all grades of manilla stock. Address MANILLA, care Journal.

WANTED—BLACK COTTON LININGS; ONE cone shape duster for cleaning common papers. Address MANCHESTER PAPER TWINE CO., Richmond, Va.

THE ADVERTISER, WHO HAS A PRACTICAL knowledge of mill management and well acquainted with the Eastern paper trade, is open for an engagement as business manager and salesman for a mill running on manilla or wrapping papers. Address P. W. L., office of this paper.

SUPERINTENDENT EXPERIENCED IN THE construction and management of ground pulp mills now open to engagement. Address GROUND PULP, Paper Trade Journal, 67 Federal street, Boston.

WANTED SITUATION—FOREMAN OF MILL making book, writing and manilla; also express and cover papers from chemical wood sulphite and wood pulp. E. D. C., care Journal.

WANTED—A FIRST-CLASS CYLINDER MAchine tender. Apply J. J. J., care Paper Trade Journal.

SITUATION WANTED—AS WATER PROOFer; had years of experience in first-class mills waterproofing paper. WATER PROOFER, Paper Trade Journal, 67 Federal street, Boston.

WANTED—GOOD PAYING SITUATION BY machine tender; competent; references. Address A. BLETZINGER, North Western Hotel, Chambers street, New York.

WANTED—A GOOD MAN FOR BOSS MAchine tender, to take charge of three machines running on manilas and express papers; none but the best need apply; good wages to the right man. Address, giving references, YORK HAVEN PAPER CO., York Haven, York County, Pa.

WANTED—A GOOD, STEADY, RELIABLE man, thoroughly acquainted with liquor making and capable of handling digesters and sulphite plant, for position as night foreman; must have good references. Apply, stating experience and what mills have worked in, R., Paper Trade Journal.

SITUATIONS WANTED BY FIRST-CLASS superintendents, machine tenders and engineers; worked on all grades of paper; both slow and fast running machines; can furnish best references if required. Apply to EAGLE LODGE No. 1, Brotherhood of Paper Makers, Box 672, Holyoke, Mass.

AGENCY WANTED

By a London pulp commission firm of responsible standing for the sale of American or Canadian pulps; intimately connected with the trade; highest banking references. Please quote c. i. f. British ports, thirty days, with samples, to

O. LECHLA,
134 Upper Thames Street, London, E. C.

TO RENT—A FRONT ROOM, CONTAINING about 550 square feet of floor space, first loft, in building occupied by The Lockwood Press, on the southwest corner of Duane and Church Streets. Apply to HOWARD LOCKWOOD & CO., on the premises.

FOR SALE—A TISSUE MILL AND A MANILLA mill on favorable terms. I. S. DILLINGHAM, 67 Federal street, Boston, Mass.

TO LEASE.

The Hanmer & Forbes Company's Manilla Mill.

BURNSIDE, Conn., April 10, 1894. C. F. HANMER, Secretary.

FOR SALE.

Fourdrinier Machine. New and Modern; wire, 92 inches wide, 45 feet long; forty 2¼ inch table rolls, three brass suction boxes; gun metal and rubber press rolls; thirteen dryers, 48×88; nine stack calenders, reels, cutter; Manning winder; cone pulley driving train.

THE BLACK & CLAWSON CO.,
Hamilton, Ohio.

FOR SALE.

Four 1,000 pound Umpherston Beating Engines, complete, with patent copper washers, sand traps, &c. Engines in first-class condition and now running, but to be taken out to make room for other machinery. Address UMPHERSTON,
care of Paper Trade Journal.

FOR SALE.

One 7 Roll Stack Chilled Calender Rolls, 81½ inch face; bottom roll, 14 inch diameter; two 12 inch and four 7 inch, with water roll for water finish; hole through one of the 12 inch rolls for water or steam, with packing box on each end; seven doctors and fixtures. The boxes for rolls are cast iron slip boxes with gibs on the inside.

One 7 Roll Stack Chilled Calender Rolls, 93½ inch face; bottom roll, 14 inch diameter; one 12 inch diameter and five 7 inch, with doctors and fixtures; water roll for water finish; cast iron slip boxes with gibs on the inside.

Two sets of Upright Reels, 88 inch face, everything complete, and capable of winding 1,500 lbs. of paper at one time, with slip belt friction. Osgood & Barker makers.

One Chilled Calender Roll, 70 inch face, 12 inch diameter.

One 76 inch Findlay Paper Cutter, nearly new, with reel frame attached, and fifteen shafts arranged so as to cut fifteen reels at once.

Two Daniels Rag Cutters, 12 inch knives.

Five Chilled Iron Calender Rolls, 6 inch diameter, 86 inch face.

One 24 inch diameter Iron Dryer, 90 inch face.

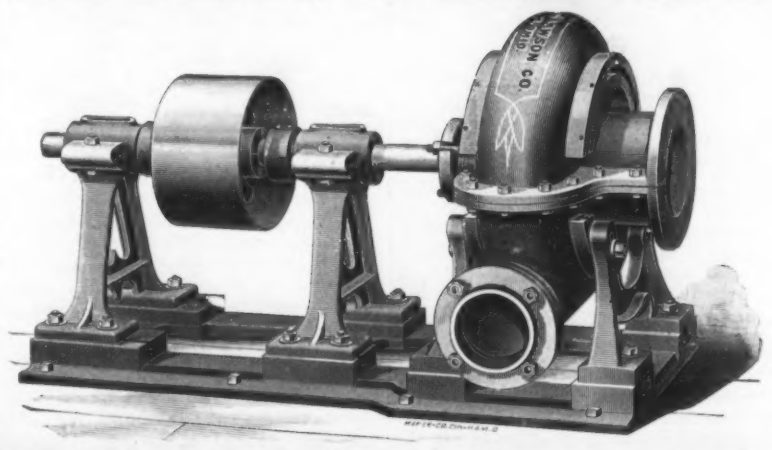
One Rice & Barton Rag Cutter.

One Milliken Screen, in good condition.

One Revolving Fan Duster, 40 inch diameter, 8 feet long, complete order.

SMITH PAPER CO., Lee, Mass.

THE BLACK & CLAWSON CO., MANUFACTURERS OF Paper Mill Machinery,



FOURDRINIER,
HARPER IMPROVED FOURDRINIER AND CYLINDER MACHINERY.

JORDAN ENGINES.

Jordan Engines Refilled.

Screens, Calenders, Rag Cutters, Cylinder Molds, Deckel Straps, Paper Cutters, Screen Plates, Dandy Rolls, Stuff Box Trucks, Iron and Brass Castings.

REVOLVING REELS AND STACK REELS.

FOR PARTICULARS ADDRESS

WE MAKE THE ONLY PERFECT DRYER. *THE BLACK & CLAWSON CO., Hamilton, Ohio.*

MEDAL AWARDED AT WORLD'S FAIR FOR OUR SEAMLESS DRYER.

PAPER EXPORT SYNDICATE.

Advertisers, a firm of old established, fine standing, with the very best of foreign connections, being aware of the fine possibilities now offering for the

EXPORT OF AMERICAN PAPER

in competition with the German export, hitherto so prosperous, but recently declining, require the co-operation of first-class manufacturers of all grades of printing and writing papers, straw and wood boards, &c. All preparatory steps are already taken and connections formed with the most desirable correspondents, who unanimously view the enterprise favorably. For further particulars please address

SYNDICATE, care of this paper.

NOTICE.

My attention having been called to the fact that certain parties are infringing certain Letters Patent granted to me, to wit: No. 212,866, dated March 4, 1879, covering a new form of carpet lining, and No. 235,698, dated December 21, 1880, covering the method of and apparatus for making the same, this is to notify all such persons, whether manufacturers or dealers, that any infringement of either of said patents will be prosecuted to the full extent of the law. MOSES NEWTON, Patentee.

PAPER MILL MACHINERY.

One 84 inch Fourdrinier part to paper machine complete, with Gould screen.

One 74 inch Fourdrinier machine complete, Gould screen; gun metal press rolls, 15x75 inches; eight iron dryers, 36x72 inches; stack of nine chilled rolls, 72 inch face; upright reel and cone pulley cutter; Bess slitters.

One Gould screen, eight plates, 10x36 inches.
One Gould screen, eight plates, 12x40 inches.
One Barber's suction.

One 70 inch machine complete, Gould screen, Fourdrinier wire, 70x33 inches; first and second presses; eight iron dryers, 30x65¾ inches; stack five chilled rolls, four 12 inches, one 16x64 inches face; upright reel, slitter and winder.

Two new 1,000 pound Holyoke Machine Co. beaters, wood tubs.

One 1,000 pound iron tub beater.
Six beating engines, 36 inch roll, iron tubs.
One 1,200 pound Horne patent engine, new.
One rotary, 7x30, double riveted, 9-16 inch shell.
Three Scott & Roberts hydraulic pulp grinders.
Three Jordan engines.
Two rag cutters and duster.
Four iron dryers, 28x72 inches.

Send for catalogue of machinery, steam engines and boilers.

1,000 feet shafting, 2 to 6 inches diameter; 500 feet belting, 5 to 48 inches wide.

Parties wanting tools, stock or machinery used in a paper or pulp mill can find it here at a bargain.

F. H. DAVIS & CO., Exchange B'd'g, Boston, Mass.

OLD DOMINION LINE

BETWEEN

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AND

Norfolk, Portsmouth, Petersburg, Richmond, Newport News, West Point and Alexandria, Va., and

WASHINGTON, D. C.

Reaching by its rail connections all points South, Southwest and West.

THROUGH RATES

From Eastern and Northern Manufacturing Points to All Points.

Quick Time. Lowest Rates. Careful Handling.

FINEST SHORT SEA TRIPS AND TOURS ON THE COAST.

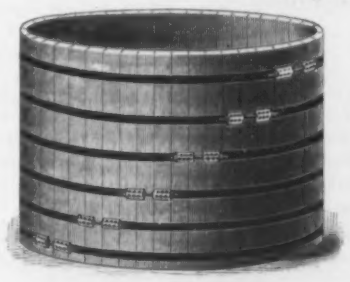
W. L. GUILLAUDEU,
Vice-President and Traffic Manager,
NEW YORK.

ESTABLISHED 1840.

GEO. J. BURKHARDT'S SONS'

Cedar Tank Factory,

2831 TO 2839 NORTH BROAD ST.,
Philadelphia.



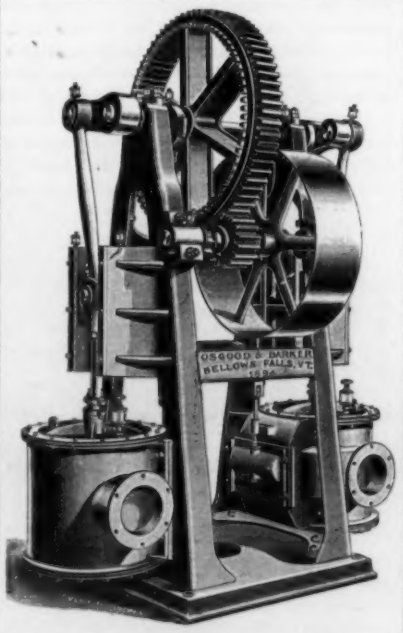
FOR SALE—A SECOND-HAND COPY OF HOFmann's Treatise on Paper Making in good condition for sale cheap. For further particulars address URGENT, care Paper Trade Journal.

A FINE OPPORTUNITY

TO GO INTO BUSINESS.

To a company that understand the coating business an offer will be made to furnish a fully equipped plant, ample room with plenty of power. Well situated for future business. Will either lease plant or take an interest in the business. Parties answering advertisement must be in position to furnish all necessary capital to buy stock and carry accounts.

Address A. B. C., care of Journal Office.



VACUUM PUMP.

Weight, Four Tons.

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OSGOOD & BARKER,

Bellows Falls, Vt.,

MANUFACTURERS OF

Sulphur Burners,
Acid Pumps,
Barkers,
Chippers,

FOR SULPHITE PLANTS.

Fourdrinier and Cylinder Paper Machines,
With one, two, three or four stacks of dryers.

Upright Reels, with two or three Drums,
Reel Stacks and Revolving Reels,
Rewinding and Slitting Machines,
Calender Buffing Machines
For buffing ends of the rolls.

Ground Wood Pulp Machines,
Wet Machines.

Pulp and Paper Machinery
For all kinds of Paper.

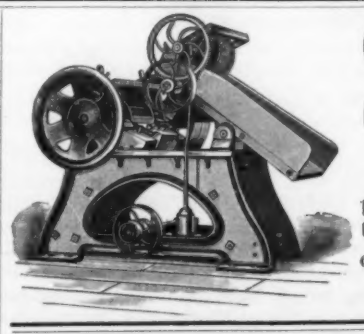
WRITE FOR DESCRIPTIONS AND PRICES.

Don't Guess at Important Matters.

Bowsher's SPEED or MOTION INDICATOR IS INDISPENSABLE

In obtaining a UNIFORM speed of machinery, and is one of the most PROFITABLE little devices ever put in a mill. Will pay for itself in 30 days. Dial 12 in. in diameter. Weight 10 pounds.

N. P. BOWSHER, South Bend, Ind.



CLARK & SPENCER,

Successors to E. P. TANNER'S

FOUNDRY AND MACHINE WORKS,

LEE, MASS.,

MANUFACTURERS OF

New and Improved **Spiral Knife Rag Cutters,**

Cylinder Paper Machines, Rag Engines, Paper Cutters, Super and Machine and Chilled Iron and Paper Roll Calenders, Stuff and Fan Pumps, Shafting, Pulleys, Gearing and Paper Mill Machinery generally.

DO YOU WANT A . .

RAG CUTTER,

TO CUT ROPE, JUTE BUTTS, BAGGING, OR ROOFING PAPER STOCK?

IF SO, WRITE TO

TAYLOR, STILES & CO.,

RIEGELSVILLE, N. J.

APPLETON WOOLEN MILLS.

MANUFACTURERS OF

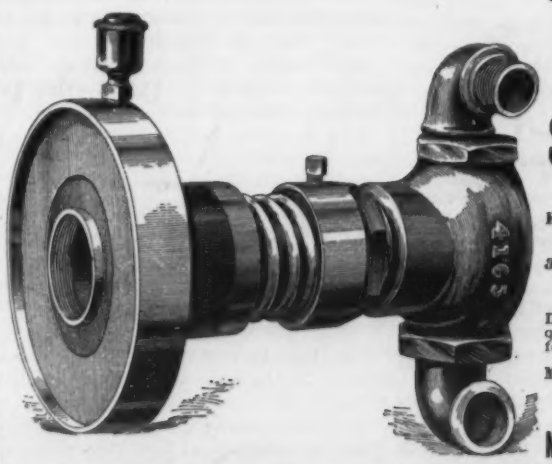
PAPER MAKERS FELTS.

The only Mill west of Ohio.
We have demonstrated our ability to compete in

Fourdrinier, Press, Cylinder and Pulp Felts

and solicit a trial order, especially for writing and book papers.

APPLETON, - - WISCONSIN.



The ROACH PATENT METALLIC Steam Joint

Patented May 13, 1884, and Sept. 8, 1885.

For Rotary Paper Dryers and Revolving Cylinders.

3,000 NOW IN USE on PAPER MACHINES.

Does away with Packing the Dryers. No Leakage of Steam. Requires No Attention and will Last for Years.

Medal Awarded at World's Fair.

Send for Circular and Price List.

M. J. ROACH, ANDERSON, IND.

RIVERSIDE PAPER CO., HOLYOKE, MASS. — "MAGNA CHARTA" BOND, "PURE LINEN STOCK" LINENS (WHITE WOVE AND CREAM LAID), "DUNDEE RECORD" LEDGERS.

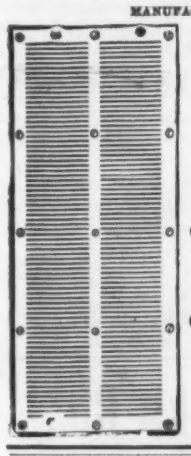
TICONDEROGA PULP AND PAPER CO., TICONDEROGA, N. Y. — WHITE MANILLA, POSTAL LINEN, MAYFLOWER LINEN, BOOK AND NEWS.

FRANKLIN PAPER CO., HOLYOKE, MASS. — ANIMAL SIZED AND SUPERCALENDERED BRISTOL BOARD, BOX BOARD, DUPLEX AND COVER PAPERS, IN WHITE, TINTS AND COLORS.

JUDSON & WILLIAMS,

HOLYOKE, MASS.,

MANUFACTURERS OF



SCREEN PLATES

—OF—

BRASS

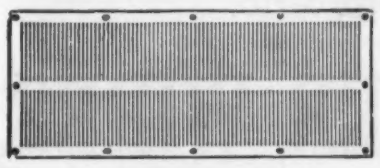
—OR—

CAST METAL.

REPAIRING

OLD SCREEN PLATES

A SPECIALTY.



OLD PLATES RENEWED.

World's Fair

HIGHEST AWARD

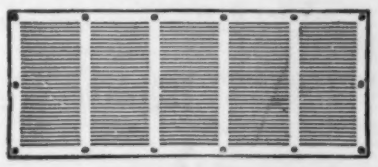
TO

SCREEN PLATES of SPECIAL BRASS,

MADE BY THE

Western Screen Plate Works,

545 Eldorado St., APPLETON, WIS.



METAL SKYLIGHTS

Absolutely no leakage from any source; no drip pang or sweating; fire-proof; ventilating.

THE CLOVER LEAF

VENTILATOR

FOR MILLS, FACTORIES AND DYE HOUSES.

Made of galvanized iron or copper. Strong upward draft; exhausts foul air, odors, gases, steam, etc. Perfectly storm-proof. Send for illustrated circular.

E. VAN NOORDEN & CO.,

383 Harrison Ave., BOSTON, Mass.

THE MORRISON & HERRON TESTING SYSTEM.

THE MORRISON & HERRON IMPROVED PAPER TESTING MACHINES.

Three Different Machines

—FOR—

Strength, Thickness and Weight.

A NEW PRINCIPLE APPLIED IN TESTING PAPER.

Thickness shown to the sixteen-thousandth part of an inch.

Used in the GOVERNMENT PRINTING OFFICE and the DEPARTMENTS at Washington.

Price, complete,	$150.00
Or Strength Indicator,	75.00
Thickness Gauge,	75.00
Paper Scale,	20.00

ADDRESS ALL ORDERS TO

HOWARD L. MORRISON,

1009 Pa. Ave., N. W., Washington, D. C.

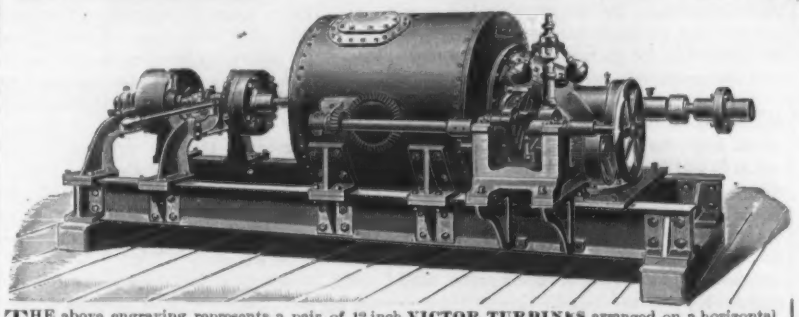
CAUTION.

All persons are liable to prosecution who make buy or use Paper Testers that confine and break paper within its edges, as my Patents cover that method.

THE VICTOR TURBINE.

UPRIGHT or HORIZONTAL.

In use in a large number of best Paper and Pulp Mills in this and other Countries.



THE above engraving represents a pair of 12 inch **VICTOR TURBINES** arranged on a horizontal shaft, with Cast Iron Flume, Draft Tubes, End Bearings for Shaft, and Driving Pulleys complete, all mounted upon a substantial cast iron bed plate. The entire arrangement is very complete and strictly first class in every particular. We are now prepared to furnish Victor Turbines, either single or in pairs, on horizontal shafts, and where the situation admits of their use we recommend them.

TESTS IN HOLYOKE FLUME.

SIZE WHEEL.	HEAD IN FEET.	HORSE POWER.	PER CENT. OF USEFUL EFFECT
15 inch	18.06	30.17	.8932
17½ inch	17.96	36.35	.8930
20 inch	18.21	49.00	.8332
25 inch	17.90	68.62	.8384
30 inch	11.65	52.54	.8676
35 inch	17.29	133.19	.8497
40 inch	16.49	148.93	.8253
48 inch	15.51	179.29	.8502

CYLINDER OR REGISTER *GATE*

INSURING HIGHEST PERCENTAGE OF USEFUL EFFECT AT

FULL AND PARTIAL GATE.

Such results, together with its nicely working gate and simple, strong and durable construction, should favorably commend it to the attention of all discriminating purchasers.

THESE WHEELS ARE OF VERY SUPERIOR WORKMANSHIP AND FINISH.

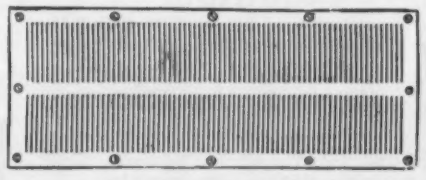
THE VICTOR WHEEL is particularly adapted to setting on **HORIZONTAL SHAFT,** DISPENSING ENTIRELY WITH GEARS.

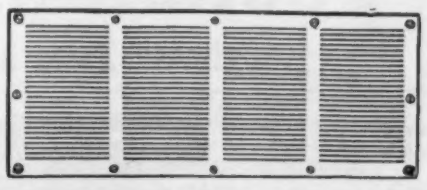
STATE YOUR REQUIREMENTS AND SEND FOR CATALOGUE TO

THE STILWELL-BIERCE & SMITH-VAILE CO., DAYTON, OHIO, U. S. A.

ANNANDALE *Screen Plate Co.,*

PATERSON, N. J.





Manufacturers and Repairers of

SCREEN PLATES.

Our new Plates are made of the **VERY BEST METAL,** and for price and durability cannot be surpassed.

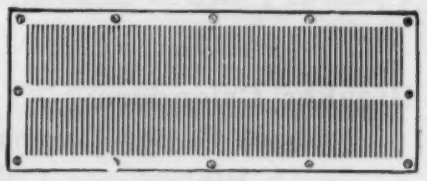
OLD PLATES RE-CLOSED.

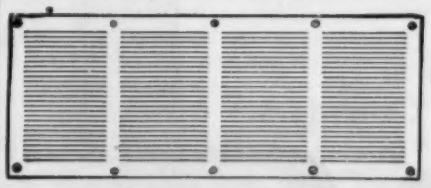
A. A. TRAIN,

21 Main St., FITCHBURG, MASS.,

MANUFACTURER OF

Screen Plates





OF BRASS OR CAST METAL,

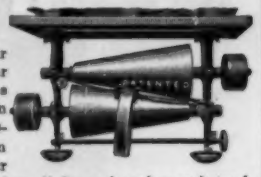
AT PRICES THAT CANNOT BE SURPASSED.

BEST STOCK USED.

Write for Prices and Gauges.

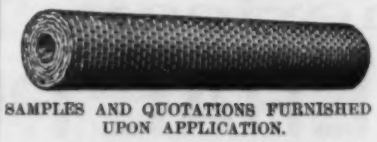
All Work Warranted.

THE EVANS FRICTION CONES

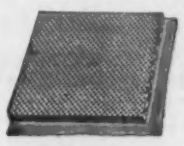


Are running forty-four (44) of the best paper machines in this country and in Europe, transmitting from 20 to 40 horse power each. Thousands of small Cones, hanging and standing, in operation, driving all kinds of machinery. Send for Catalogue "G."

EVANS FRICTION CONE CO., 85 Water St., Boston, Mass.



SAMPLES AND QUOTATIONS FURNISHED UPON APPLICATION.



IMPERIAL ASBESTOS SECTIONAL PIPE

AND BOILER COVERING.

Asbestos Prepared Roofings.

(Specially adapted to Paper Mills).

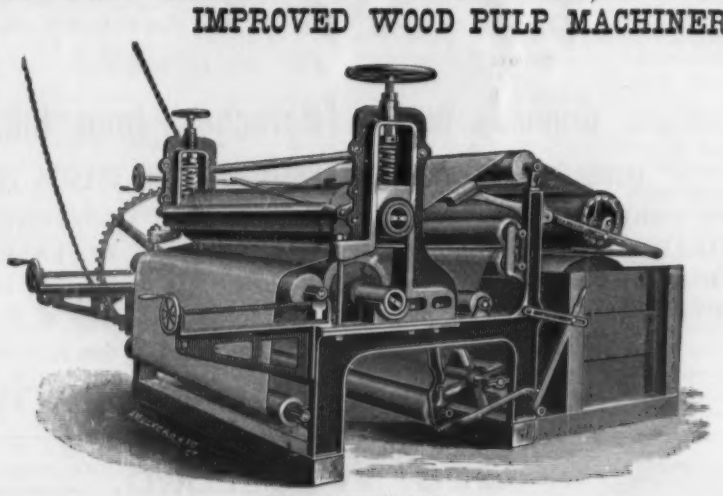
Chicago, Ill. **H. F. WATSON COMPANY,** Erie, Pa.

TREVOR MANUFACTURING CO.,

LOCKPORT, N.Y.

Manufacturers of

IMPROVED WOOD PULP MACHINERY.

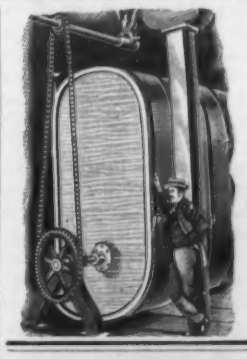


IMPROVED WET MACHINE.

"Niagara" Grinders, Double and Single Splitters, the "Trevor" Improved Wet Machines, "1890" and "Giant" Barkers, Cross Sawing Machines, Drag Saw Machines, Improved Wood Slabbing and Sawing Machines, Knot Borers, Stuff Pumps, Double and Triple Pumps, for general use in Pulp and Paper Mills.

Write for Catalogue "C" and Discounts. Address

TREVOR MANUFACTURING CO., - - LOCKPORT, N. Y.



THE SAVAGE PERFECTING STUFF CHEST.

Fits into a narrow space and requires but little power to operate.

It has a double agitating motion, moving the stuff in different directions, which prevents "floating."

It empties itself clean; no waste of stuff and protects from dirt.

Quantity of stuff in chest always shown by indicator.

In writing give space in height, length and breadth if pressed for room; also the amount of stock in dry paper that the chest is wanted to hold.

PATENTED AND MANUFACTURED BY

E. L. SAVAGE, Mechanic Falls, Me.

FOSTER & BROWN, SACCARAPPA, MAINE.

MACHINISTS AND IRON FOUNDERS.

SPECIALTIES:

Improved Paper-Coating Machines; Hanging Machines and Power Reels for Coated Paper; the Merrill-Foster Noiseless Pulp Screens; Paper Slitting and Trimming Machines; Hardened and Ground Slitters; Automatic Elevators.

BUILT UNDER OUR OWN SUPERVISION.

THE "WANDEL" Patent Rotary STRAINER

Is the best Screen on the market, and is now used in

148 Paper Mills in Germany.
25 Paper Mills in Austria.
85 Paper Mills in France.
12 Paper Mills in Switzerland.
31 Paper Mills in Italy.
16 Paper Mills in Spain.
26 Paper Mills in England.
9 Paper Mills in Sweden and Norway.
10 Paper Mills in Russia.
And in the Thilmany Pulp and Paper Mills, Kaukauna, Wis.

The "Wandel" Patent Rotary Strainer is delivered ready for use, with or without the bearing frame.

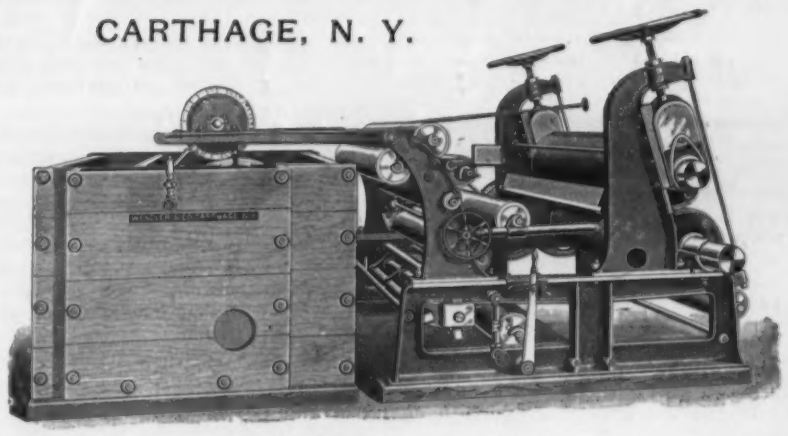
FOR FURTHER PARTICULARS APPLY TO

CHR. WANDEL, Reutlingen, Germany.

Or GEORGE HAMILTON, 74 Wall St., New York.

WENDLER & CO.,

CARTHAGE, N. Y.



STANDARD WET MACHINE.

A Full Line of Centrifugal and Fan Pumps.

ALL MACHINERY AND APPLIANCES USED IN THE MANUFACTURE OF WOOD PULP AND SULPHITE FIBRE.

The New Tariff.

The Senate, in Committee of the Whole has adopted the following changes in the tariff schedules on various products in which the paper trade is interested, herewith published item by item in comparison with the present law:

CHEMICALS, ETC.

Alumina, alum, alum cake, patent alum, sulphate of alumina, and aluminous cake, and alum in crystals or ground, four-tenths of one cent per pound. (Old—six-tenths of 1 cent per pound.)

Borax, crude, or borate of soda, or borate of lime, 1 cent per pound; refined borax, 2 cents per pound. (Old—Borax crude, borate of soda, or borate of lime, 3 cents per pound; refined borax, 5 cents per pound.)

Baryta, sulphate of, or barytes, manufactured, $3 per ton. (Old—Including barytes earth, unmanufactured, $1.12 per ton; manufactured, $6.72 per ton.)

38. Blues, such as Berlin, Prussian, Chinese and all others, containing ferrocyanide of iron, dry or ground in or mixed with oil, 6 cents per pound; and in pulp or mixed with water, 6 cents per pound on the material contained therein when dry. (Old—Six cents per pound.)

39. Blanc-fixé, or artificial sulphate of barytes, and satin white or artificial sulphate of lime, 25 per cent. ad valorem. (Old—Three-fourths of a cent per pound.)

42. Ochre and ochrey earths, sienna and sienna earths, umber and umber earths, ground in oil, 1¼ cent per pound. (Old—Ochre and ochre earths, sienna and sienna earths, umber and umber earths not specially provided for in this act, dry, one-fourth of one cent per pound; ground in oil, 1½ cents per pound.)

43. Ultramarine blue, whether dry, in pulp or mixed with water, and wash blue containing ultramarine, 3 cents per pound. (Old—Four and one-half cents per pound.)

49. Acetate of lead, white, 2¼ cents per pound; brown, 1¼ cents per pound; litharge, 1½ cents per pound. (Old—Acetate of lead, white, 5½ cents per pound; brown, 3½ cents per pound.)

54. Bichromate and chromate of potash, 25 per cent. ad valorem. (Old—Three cents per pound.)

80. Lime, 5 cents per 100 pounds, including weight of barrel or package. (Old—Six cents per 100 pounds.)

82. Clays or earths, unwrought or unmanufactured, not specially provided for in this Act, $1 per ton; wrought or manufactured, not specially provided for in this Act, $2 per ton; China clay or kaolin, $2 per ton. (Old—Clays or earths, unwrought or unmanufactured, not specially provided for, $1.50 per ton; wrought or manufactured, not specially provided for, $3 per ton; China clay or kaolin, $3 per ton.)

WOOLENS.

282. On blankets, hats of wool, and flannels for underwear and felts for paper makers' use and printing machines, composed wholly or in part of wool, the hair of the camel, goat, alpaca, or other animals, valued at not more than 30 cents per pound, 25 per cent. ad valorem; valued at more than 30 and not more than 40 cents per pound, 30 per cent. ad valorem; valued at more than 40 cents per pound, 35 per cent. ad valorem. Provided, that on blankets over 3 yards in length the same duties shall be paid as on woolen and worsted cloths, and on flannels weighing over 4 ounces per square yard, the same duties as on dress goods. (Old)—On blankets, hats of wool, and flannels for underwear composed wholly or in part of wool, the hair of the camel, goat, alpaca or other animals, valued at not more than 30 cents per pound, the duty per pound shall be the same as the duty imposed by this act on 1½ pounds of unwashed wool of the first class, and in addition thereto 30 per cent. ad valorem; valued at more than 30 and not more than 40 cents per pound the duty per pound shall be twice the duty imposed by this act on a pound of unwashed wool of the first-class; valued at more than 40 cents and not more than 50 cents per pound the duty per pound, shall be three times the duty imposed by this act on a pound of unwashed wool of the first class; and in addition thereto upon all the above named articles 35 per cent. ad valorem. On blankets and hats of wool composed wholly or in part of wool, the hair of the camel, goat, alpaca, or other animal, valued at more than 50 cents per pound, the duty per pound shall be three and a half times the duty imposed by this act on a pound of unwashed wool of the first class, and in addition thereto 40 per cent. ad valorem. Flannels composed wholly or in part of wool, the hair of the camel, goat, alpaca, or other animals, valued at above 50 cents per pound, shall be classified and pay the same duty as women's and children's dress goods, coat linings, Italian cloths, and goods of similar character and description provided by this Act.)

PULP AND PAPER.

303. Mechanically ground wood pulp and chemical wood pulp, unbleached or bleached, 10 per cent. ad valorem. (Old—Mechanically ground wood pulp, $2.50 per ton, dry weight; chemical wood pulp, unbleached, $6 per ton, dry weight; bleached, $7 per ton, dry weight.)

304. Sheathing paper and roofing felt, 10 per cent. ad valorem. (Old—Ten per cent.)

306. Printing paper, unsized, sized or glued, suitable only for books and newspapers, 15 per cent. ad valorem. (Old—Printing paper unsized, suitable only for books and newspapers, 15 per cent. ad valorem. Printing paper sized or glued, suitable only for books and newspapers, 20 per cent. ad valorem.

307. Papers known commercially as copying paper, filtering paper, silver paper and all tissue paper, white, printed, or colored, made up in copying books, reams, or in any other form, and albumenized or sensitized paper, 30 per cent. ad valorem. (Old—Papers known commercially as copying paper, filtering paper, silver paper and all tissue paper, white or colored, made up in copying books, reams, or in any other form, 8 cents per pounds, and in addition thereto 15 per cent. ad valorem; albumenized or sensitized paper, 35 per centum ad valorem.)

308. Parchment papers and surface coated papers, and manufactures thereof, cardboards and photograph, autograph and scrap albums, wholly or partially manufactured, 30 per cent. ad valorem. Lithographic prints from either stone or zinc, bound or unbound (except cigar labels and bands lettered or blank, music and illustrations when forming a part of a periodical or newspaper and accompanying the same, or if bound in or forming part of printed books), on paper or other material not exceeding eight-thousandths of an inch in thickness, 20 cents per pound; on paper or other material exceeding eight-thousandths of an inch and not exceeding twenty-thousandths of an inch in thickness, and exceeding 35 square inches cutting size in dimensions, 8 cents per pound; prints exceeding eight-thousandths of an inch and not exceeding twenty-thousandths of an inch in thickness and not exceeding 35 square inches cutting size in dimensions, 5 cents per pound; lithographic prints from either stone or zinc on cardboard or other material exceeding twenty-thousandths of an inch in thickness, 6 cents per pound; lithographic cigar labels and bands, lettered or blank, printed from either stone or zinc, if printed in less than ten colors, but not including bronze or metal leaf printing, 20 cents per pound; if printed in ten or more colors, or in bronze printing, but not including metal leaf printing, 30 cents per pound; if printed in whole or in part in metal leaf, 40 cents per pound. (Old.—Papers known commercially as surface-coated papers, and manufactures thereof, cardboards, lithographic prints from either stone or zinc, bound or unbound, except illustrations when forming a part of a periodical, newspaper, or in printed books accompanying the same, and all articles produced either in whole or in part by lithographic process, and photograph, autograph, and scrap albums, wholly or partially manufactured, 35 per cent. ad valorem.)

MANUFACTURES OF PAPER.

309. Paper envelopes, 20 per cent. ad valorem. (Old, 25 cents per thousand.)

310. Paper hangings and paper for screens or fireboards, writing paper, drawing paper, and all other paper not specially provided for in this act, 20 per cent. ad valorem. Old, 25 per cent.

311. Blank books of all kinds, 20 per cent. ad valorem; books, including pamphlets and engravings, bound or unbound, photographs, etchings, maps, charts, and all printed matter not specially provided for in this act, 25 per cent. ad valorem. Old—Books, including blank books of all kinds, pamphlets and engravings, bound or unbound, photographs, etchings, maps, charts and all printed matter not especially provided for in this act, 25 per cent. ad valorem.

312. Playing cards, in packs not exceeding fifty-four cards and at a like rate for any number in excess, 10 cents per pack and 50 per cent. ad valorem. Old—50 cents per pack.

313. Manufactures of paper, or of which paper is the component material of chief value, not specially provided for in this Act, 20 per cent. ad valorem. Old—25 per cent.

FREE LIST.

395. Baryta, carbonate of, or witherite, and baryta, sulphate of, or barytes, unmanufactured, including barytes earth. Old.—Baryta carbonate of, or witherite, free of duty; and baryta, sulphate of, or barytes, unmanufactured, including barytes earth, $1.12 per ton.

396. Bauxite, or beauxite. Old—Free of duty.

405. Blue vitriol, or sulphate of copper. Old—2 cents per pound.

410. Books, engravings, photographs, bound or unbound, etchings, maps and charts, which shall have been printed more than twenty years at the date of importation, and all hydrographic charts, and scientific books and periodicals devoted to original research, and publications issued for their subscribers by scientific and literary associations or academies, or publications of individuals for gratuitous private circulation and public documents issued by foreign Governments. (Old—Books, engravings, photographs, bound or unbound, etchings, maps and charts, which shall have been printed and bound or manufactured more than twenty years at the date of importation, free of duty.)

411. Books and pamphlets printed exclusively in languages other than English; also books and music, in raised print, used exclusively by the blind. (Old—Free of duty.)

412. Books, engravings, photographs, etchings, bound or unbound, maps and charts imported by authority or for the use of the United States or for the use of the library of Congress. (Old—Free of duty.)

413. Books, maps, lithographic prints and charts, specially imported, not more than two copies in any one invoice, in good faith, for the use of any society incorporated or established for educational, philosophical, literary or religious purposes, or for the encouragement of the fine arts, or for the use or by order of any college, academy, school or seminary of learning in the United States, subject to such regulations as the Secretary of the Treasury shall prescribe. (Old, free of duty).

414. Books, libraries, usual furniture and similar household effects of persons or families from foreign countries, if actually used abroad by them not less than one year, and not intended for any other person or persons, nor for sale. (Old—Books or libraries, or parts of libraries, and other household effects of persons or families from foreign countries, if actually used abroad by them not less than one year, and not intended for any other person or persons, nor for sale, free of duty.)

497. Istle or Tampico fibre, jute, jute butts, manilla, sisal grass, sunn, flax straw, flax not hackled, tow of flax or hemp, hemp not hackled, hemp, flax, jute and tow wastes, and all other textile grasses or fibrous vegetable substances, unmanufactured or undressed, not specially provided for in this Act. (Old—Free of duty.)

537. Lime, chloride of, or bleaching powder. (Old—Free of duty.)

562. Newspapers and periodicals; but the term "periodicals" as herein used shall be

THE
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"Best and Most Economical Made."
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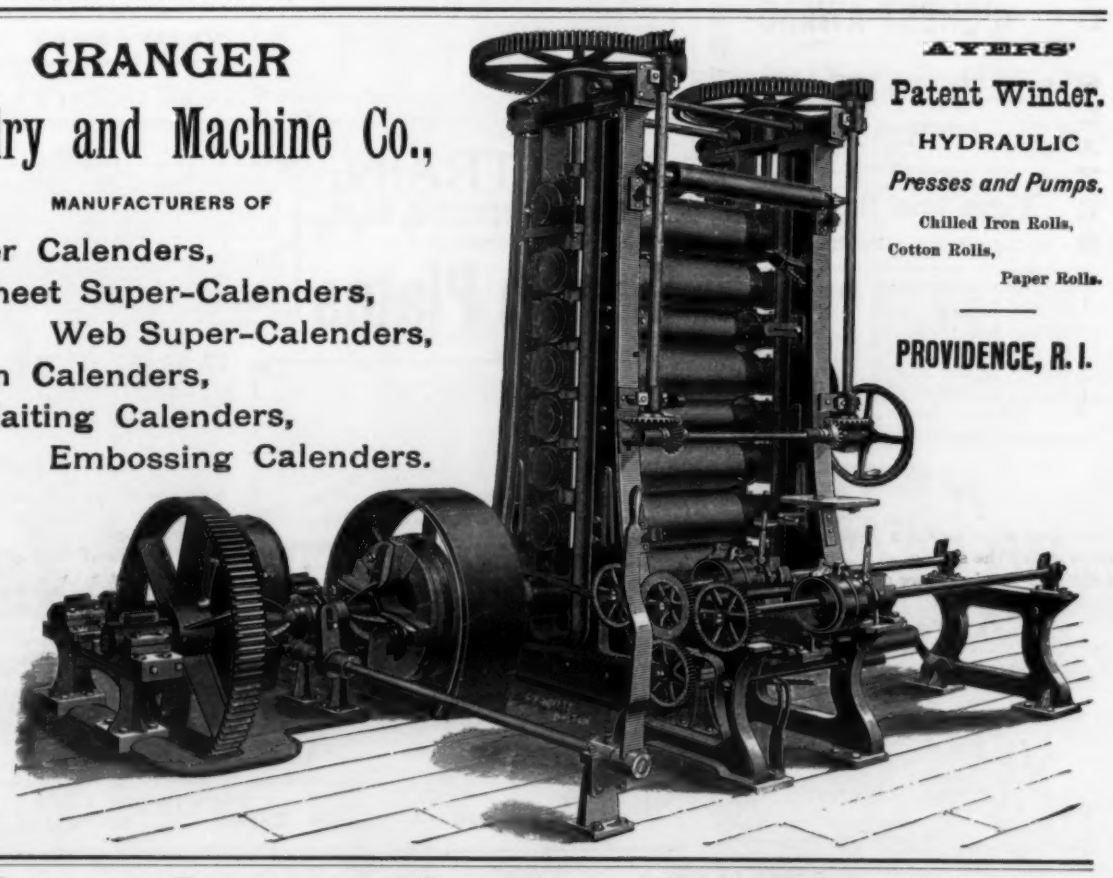

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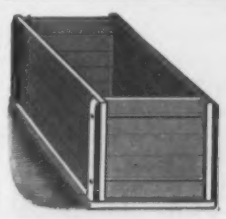

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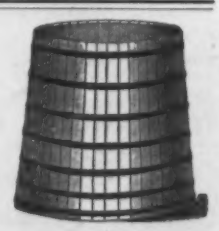


understood to embrace only unbound or paper covered publications, containing current literature of the day and issued regularly at stated periods, as weekly, monthly, or quarterly. (Old—Free of duty.)

577. Paper stock, crude, of every description, including all grasses, fibres, rags, waste, shavings, clippings, old paper, rope ends, waste rope, waste bagging, old or refused gunny bags or gunny cloth, and poplar or other woods, fit only to be converted into paper. (Old—Free of duty.)

622. Sulphate of soda, or salt cake, or nitre cake. (Old—One dollar and twenty-five cents per ton.)

642. Sulphur, lac or precipitated, and sulphur or brimstone, crude, in bulk, sulphur ore, as pyrites, or sulphuret of iron in its natural state, containing in excess of 25 per cent. of sulphur, and sulphur not otherwise provided for. (Old — Free of duty.)

643. Sulphuric acid: Provided, That upon sulphuric acid imported from any country, whether independent or a dependency, which imposes a duty upon sulphuric acid exported from the United States, there shall be levied, paid and collected the rate of duty existing prior to the passage of this act. (Old—Free of duty. Retaliatory proviso added in new law.)

Paper Folding Machine.

In machines where the pile of paper to be folded is placed on a horizontal table or bank, and is thence lifted or drawn sheet by sheet on to a horizontal folding board, as is commonly in use, the act of drawing the sheet through the air and along the horizontal surface of the folding board causes the front and forward edges of the sheet to curl upward and to accumulate air between the under surface of the sheet and the folding board, thus bringing the sheet to a rest unsteadily, and causing many sheets to miss being folded at the proper time or to be folded untruly and with uneven edges. For the purpose of avoiding this loss of speed and accuracy a new folding machine, lately patented, is provided with a sloping table or bank for holding the pile of paper to be folded. From this table or bank the sheets are drawn onto the folding board, which has a further declination. The front edge of the sheet, being thus at a continuously declining angle to the resistance when being drawn through the air, is kept down in transit, cuts the air from between its under surface and the surface of the folding board and rests firmly before an inclined folding knife descends.

For the purpose of folding sheets of eight pages requiring two folds, an inclined folding knife and rollers, which form and direct the first fold, are placed with their length at the same angle or declination as and parallel with the front edge of the folding board, whereby the operator in drawing the sheet to the gauges does not pass either hand beneath the inclined folding knife edge, and the inclined folding knife and rollers which form and direct the second fold are placed at right angles to the inclined folding knife and rollers which form the first fold. When the folded sheet passes through the second fold rollers of a machine for folding eight pages, it is in the desired position for delivery, *i. e.*, nearly upright with its back folded edge forward. To secure direct delivery without carrying, twisting or turning the sheet there is an inclined adjustable facing bar or guide at the point of delivery from the rollers in order to steady the sheet until it reaches by its own momentum the opposite face of a right-angled sloping gathering trough placed at right angles to the delivery rollers for receiving the folded sheets. The slope of this trough falling away from the rollers prevents the sheet from rebounding. At the moment the folded edge of the sheet reaches the face of the gathering trough, an adjustable pusher forces the sheet past shallow stops, which prevent the sheet returning in the way of the delivery of the next sheet, and is so added to the pile of work in the gathering trough.

For the purpose of folding sheets of sixteen pages requiring three folds the foregoing plan is followed to the end of the second fold, where the inclined folding knife and rollers which form and direct the third or last fold are placed at right angles to the second, and the gathering or knocking-up trough is located in suitable position to receive the sheets.

The inclined folding knives, rollers and pusher are actuated by rods and cams connected with a driving bar moved by any ordinary power.

A vacuum chamber upon the suction pipe, close to the pump, is always an advantage, and on long lines of pipe, or on pumps running at a high rate of speed, is absolutely necessary. Its utility consists in causing a steady and uniform flow of the fluid through the suction pipe, and thus preventing pounding or water hammering, which is always incident to long suctions.

Manufacturing News.

EASTERN STATES.

The Deerfield River Company, Readsboro, Vt., has held its annual meeting and elected these officers: Directors, Moses Newton, Daniel H. Newton, John C. Newton, James S. Newton and Wm. B. McClellan; president, Moses Newton; vice-president, Daniel H. Newton; treasurer, John C. Newton.

The Eastern Strawboard Company, with mills at Versailles and Manchester, Conn., lately started its Manchester mills on strawboard after a shutdown of several months.

The East Hartford Manufacturing Company, Burnside, Conn., has started up its mill, which was shut down indefinitely about a month ago.

Walter L. Allen, formerly with the Norwich Carpet Lining Company, and Frank W. Browning, superintendent for the same company, have been granted a patent on a machine for folding and plaiting paper, for the manufacture of carpet lining. The inventors claim that their machine will do three times the amount of work of the machines in use at present and that it will run easier and with less power. This company is allied to the Uncas Paper Company, which makes the board for the carpet lining.

The Pawtucket mill, Dracut, Mass., has been shut down for a few days to put in a new vat.

Arrears of pay caused the hands at the pulp mill at Orono, Me., to threaten to lay off last week. The difficulty was settled by giving the men their money.

MIDDLE STATES.

The contract for building the new felt mill at Greenbush, N. Y., has been awarded to the Flynt Building and Construction Company, of Palmer, Mass. Work began on Monday, June 18, and the mill is to be completed in August. The main building is to be 257 feet long, 60 feet wide, three stories with basement, with an addition in the rear 70x80 for boiler and power house. The plant will have a wool storage building 50x150 feet, and a side track from the H. R. R. R. running directly to it. The whole has been planned by Lockwood, Greene & Co., of Boston. The building will be of the slow burning mill construction and, provided throughout with a sprinkler system, will be practically fire proof.

The mill of the Sheffield Manufacturing Company, Saugerties, N. Y., is now running under the supervision of the New York and Pennsylvania Company, and will soon begin to run on full time.

The Thompson & Norris Company, Chatham, N. Y., has contracted for a large supply of straw board in the West, which it will use in making patent bottle wrappers. It will close down its Chatham mill shortly.

The Phoenix Paper Company, Battenville, N. Y., has resumed on half time, and expects to continue during the summer.

The Metropolitan Electric Company, Reading, Pa., is putting up a new power station, and has placed the contract for the iron roof and traveling crane with the Berlin Iron Bridge Company, East Berlin, Conn.

The Fort Miller Paper Mill, Fort Miller, N. Y., and the pulp mill at the same place, have been shut down for a few days to make repairs in the boiler house.

The Bennington Falls Pulp Company, Middle Falls, N. Y., expects to shut down during July to make a new flume. Its mill will be shut down about two weeks. This will also close the Ondawa Paper Company's mill at the same place, as the latter is dependent on the former for water.

The Alice Falls (N. Y.) Pulp Company has elected the following named officers: President, Loren Allen; vice-president, J. M. Coolidge; secretary, M. C. Allen; treasurer, T. S. Coolidge.

The property of the Westmoreland Paper Company, West Newton, Pa., has been sold to James A. Frame & Son, builders, New York, who it is understood bought it for speculative purposes. The transfer was made on June 8. The purchase price is not known, but it is said to have been far below the real value of the property.

WESTERN STATES.

The paper mill at Niles, Mich., has been shut down for repairs.

The second paper machine with other machinery at the new mill at Nekoosa, Wis., is being set up.

The Minneapolis Paper Company, Minneapolis, Minn., is building a large warehouse, on First avenue, between Washington and Third streets, in that city.

SOUTHERN STATES.

A company to build a paper mill at Kansas City, Mo., is being organized by T. C. Bright.

Electro-Chemistry in the Paper Mill.

Sixth Paper—Cells and Diaphragms, continued.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By James F. Hobart.

After inspecting the several typical forms of electrolytic cells illustrated in the fifth paper (Paper Trade Journal, June 16), it would seem that, according to theory, the best form of electrolytic cell should be constructed something as in Fig. 13. There we have a single tank separated into two parts by a porous diaphragm, shown by the section lining, each part of the cell being fitted with supply pipes for receiving the salt solution, and other pipes for the escape of the ions. The supply pipes marked Na Cl, are connected with some suitable source

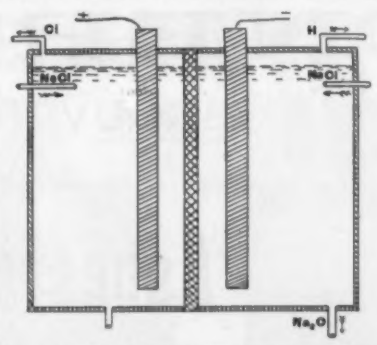


Fig. 13.—Theoretical Electrolytic Cell.

of supply, so that an equal level may at all times be maintained in both tanks, say at the dotted horizontal line.

The pipe marked Cl is to remove the chlorine gas as fast as it is liberated. The pipe Na_2O is where the caustic soda solution is drawn off as fast as it becomes saturated to a given degree of strength. A pipe at H permits the escape of what hydrogen may be formed in the soda cell. The section lined part of the drawing is a diaphragm made up of porous clay, asbestus or any other suitable material. The electrodes are of carbon and iron, + and — respectively. The exposed surface of the anode is the same as in Fig. 9 (Paper V.), viz., 180 square inches, but as only one side of the carbon plate in Fig. 13 is opposed to the kathode, the plate of carbon must be much larger than that shown in Fig. 9, where two sides and both edges were exposed to electrolytic action. The plate in Fig. 13 must therefore measure 10x18 or 9x 20 inches, and, as stated, only one side counts.

In Fig. 13 it is possible to put the anode and kathode very close to each other and to the diaphragm. Indeed all of the space necessary between them is enough to secure circulation of the electrolyte, and to prevent the bubbles of gas (both of chlorine and hydrogen) on both plates from gathering between the plates and diaphragm. If they are allowed to do this, the resistance of the cell will be greatly increased, and its efficiency diminished in a corresponding ratio. Hydrogen and chlorine are both very poor conductors of electricity, and a collection of bubbles one-half an inch thick between two plates will increase the electrical resistance many fold.

Not less than one-half inch of space should be allowed between the electrodes and diaphragm except means are provided (say by a pump) for keeping up a circulation of the electrolyte and dispersing the gas bubbles. Allowing the diaphragm to be one-fourth of an inch thick, and of excellent conductivity, we will estimate that its conductivity is equal to one-half an inch of saturated soda solution. With one-half inch of solution on each side of the diaphragm the total amount of liquid through which current must be forced is an inch and a half or just one-half the thickness in the single fluid cell described in Paper V. The resistance of that cell was .06 ohm. The resistance of the cell shown by Fig. 13, will then be .03 ohm, or just one-half.

So far this form of cell seems to have many good qualities. It is simple. The process may be continuous, owing to the supply and delivery pipes. And the ohmic resistance is small, thereby using very little current in overcoming that resistance. This cell, however, has very serious faults. The carbon plate is large, being 10x18 inches, and will prove a bad thing to keep in shape, as stated in the last paper. Chlorine is not supposed to affect carbon, but it does, or the electric current acting in concert with the chlorine and other elements causes the carbon to disintegrate; hence its failure is only a question of time and the amount of use.

The diaphragm also suffers. It not only tends to go to pieces, but the pores fill up and its conductivity decreases. The diaphragm shown in Fig. 13 is large and very thin, only one-fourth of an inch thick. To keep this large plate from bending either way one-half of an inch is sure to end in failure. A flat surface is the hardest to keep in shape when it is exposed to pressure, to which diaphragms are exposed as surely as if they were plates in a steam boiler.

In that piece of apparatus the flat form of surface is religiously avoided whenever it is possible to do so, and circular segments are used instead of flat surfaces. It is in order to do the same thing with diaphragms and make them cylindrical by all means. For these reasons it is not practicable to use the diaphragm shown in Fig. 13, but instead some form like that shown by Fig. 14 may

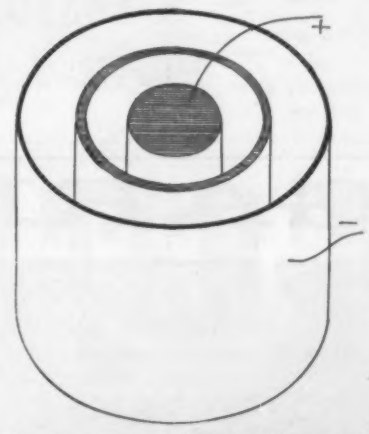


Fig. 14.—Circular Form of Anode and Diaphragm.

be substituted. Here the diaphragm is circular, like the porous pot in a Leclanche battery. The anode must therefore be rolled up from a flat to a circular section and put inside of instead of beside the diaphragm.

Although diaphragms made in this form are practicable they fail very quickly, because they are subjected to disintegrating causes and go to pieces in a short time in a manner much similar to the way in which the flat diaphragms fail. The cylindrical diaphragm is therefore better than the plate form only in its freedom from buckling. The substance will disintegrate, flake and scale off just the same as with the plate form, but it cannot bend out of place and come in contact with some other part of the apparatus. Some diaphragms of this kind were described in The Paper Trade Journal of March 24, 1894, the tubes being made of porous porcelain.

Although the diaphragms disintegrate this seems to do no harm, provided the pieces can be kept in place. To this end the scheme may be adopted of making a diaphragm of asbestus by packing it between two perforated tubes, as shown by Fig. 15. An electrolytic cell containing a

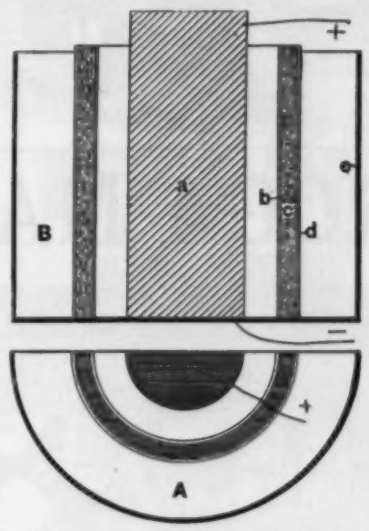


Fig. 15—Asbestus Diaphragm in Circular Cell.

diaphragm of this kind was illustrated and described in The Paper Trade Journal of October 14, 1893. Fig. 15 illustrates a modification of this diaphragm, as, instead of being built very close to the anode, it is constructed entirely independent thereof, as shown. A is the plan view, and B is a sectional elevation of the cell.

The carbon anode *a* is placed inside of the diaphragm, which is built up of two perforated walls or holders, *b* and *d*. The intermediate space *c* is filled with asbestus or other porous substance. The outer holder *d* may be made of iron. Indeed a piece of wire screen will answer perfectly for this part of the apparatus. The inner holder *b* must be made of some substance not attacked by chlorine. Wire screening may be used for this holder also, but it must be so protected by tar, asphaltum or some similar substance that it cannot be attacked by the acids or gases. Probably a sheet of thick asbestus board may be used to advantage for the inner holder. The space between the two may be tightly packed with fibrous asbestus, the same as is used for packing asbestus valves, rotary bleach manholes, &c.

There is another form of construction which is shown by Fig. 16, and which is substantially the same as described under date of October 14 in these columns. This cell, although belonging to the "double fluid and diaphragm type," really contains

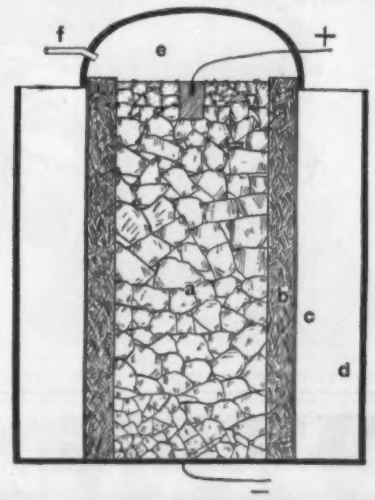


Fig 16.—Combined Anode and Diaphragm.

only a single fluid, the anode *a* being composed of broken carbon or gas coke placed inside of the diaphragm *b*, which virtually serves as a containing vessel or holder for the carbon anode. Such a construction is easily effected; a wooden or metal form of the required diameter is wound with the necessary thickness of asbestus paper; then a wire jacket is snugly fitted to the outside of the asbestus and the diaphragm is complete.

To construct the anode, a chunk of carbon has a hole drilled in it, into which a heavy insulated copper wire is thrust, the lower end of the wire having been bored and cleaned before putting it into the hole. Melted lead is poured into the hole around the wire, fixing it in place and forming a good contact between the wire and the piece of carbon. A coating of tar, or other protecting coating, is then applied to the junction of the wire and carbon, and the latter is placed in the cavity formed by removing the wooden core from the asbestus diaphragm.

Quite large pieces of coke or carbon are packed into the diaphragm, care being taken to have the mass very porous in order to admit of the free passage of the chlorine gas which is evolved at the points of contact between the anode and diaphragm. A dome, *e*, is placed air tight over the anode and diaphragm, to collect the chlorine, which is led away to the lime vats by the pipe *f*.

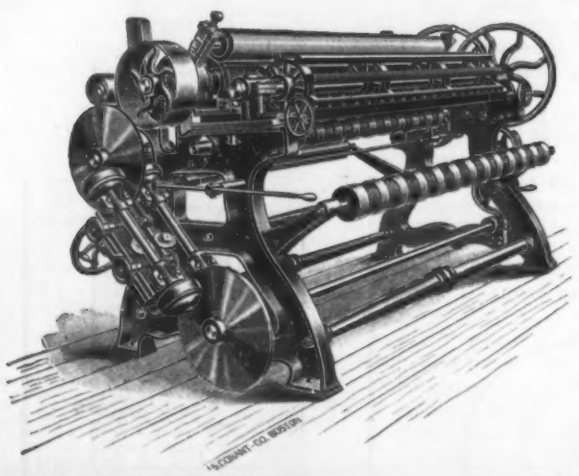
According to theory, this form of construction for an electrolytic cell possesses many advantages. The anode may disintegrate all it wants to, yet it cannot get out of shape. The diaphragm may swell and come apart, but it cannot get away, because it is held by the anode on one side, and by a stout bit of woven wire on the other. The electrical resistance must be very low, because the section of liquid is very thin and virtually is in immediate contact with the anode. There can be no contamination of the ions, because no soda can get into the anode, the pressure of the electric current effectually preventing that. The process can be easily made continuous, because the salt solution can flow into the top of the cell *d*, and the caustic soda solution can be drawn off from the bottom of the cell as fast as it is deposited.

With this cell, as with all others, there are weak points, and one of them is that all of the chlorine must pass through the diaphragm. The soda is deposited on the outer surface of the diaphragm and the surface of cathode. The chlorine must go to the anode, and to do it must pass through the pores of the diaphragm. This is done all right as long as the pores are large enough and current is flowing. As soon as the current stops and the apparatus is allowed to stand, the salt solution will tend to penetrate the diaphragm and the chlorine will work out through it and attack the wire covering of the diaphragm.

Again, after considerable use the pores of the diaphragm will become clogged or stopped up, rendering it impervious to the passage of chlorine. When this occurs, and enough pressure (voltage) is used still to force current through the apparatus, the diaphragm will become as a part of the anode, and chlorine will be liberated outside of the wire cloth in the main cell *d*. Such an occurrence virtually transforms the apparatus into a single fluid cell, with all of the disadvantages thereto belonging.

Another thing which will eventually cause trouble in this kind of a cell, even if the diaphragm is kept porous by renewal, is the clogging of the cavities in the anode, making necessary frequent overhauling and cleaning of that member also a necessity. The benefit to be derived from extremely low ohmic resistance of a cell is not as great as is commonly supposed, for as almost any cell of large surface has a resistance of only a fraction of an ohm there is no possibility of greatly reducing that resistance, hence no opportunity of saving in this direction; also, the electrolytic resistance (counter c. m. f.) being much larger than the ohmic resistance, and being constant for all sizes of cells (from 1.5 to 2. volts), makes the ohmic resistance almost disregardable in ordinary calculations.

(To be continued.)



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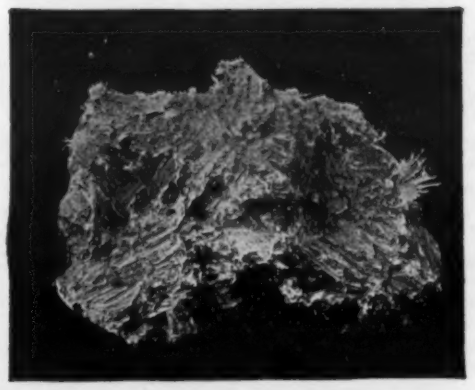

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NEW HAMPSHIRE—Glen Manufacturing Co., Berlin Falls, 3; Sugar River Paper Co., Claremont, 1; Wilder & Co., Ashland, 1.

MAINE—Umbagog Pulp Co., Livermore Falls, 2; Bangor Paper Co., Orono, 4; Jay Paper Co., Jay, 1; Rumford Falls Paper Co., Rumford Falls, 20; Hollingsworth & Whitney, Gardiner, 1.

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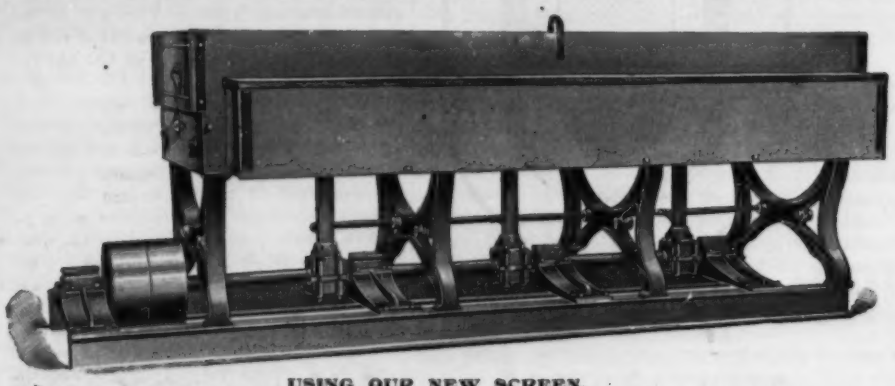

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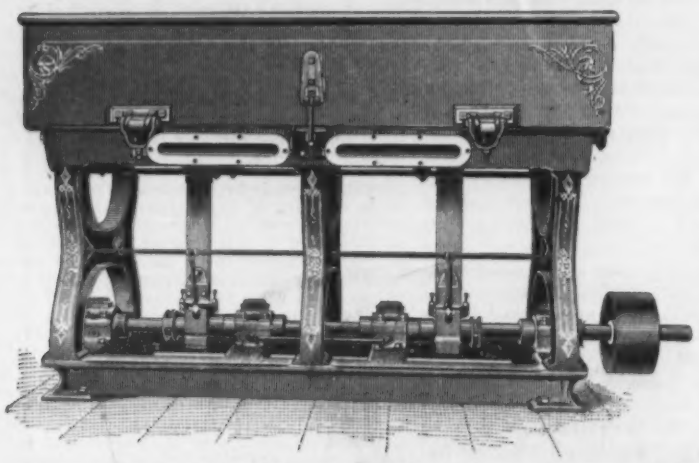

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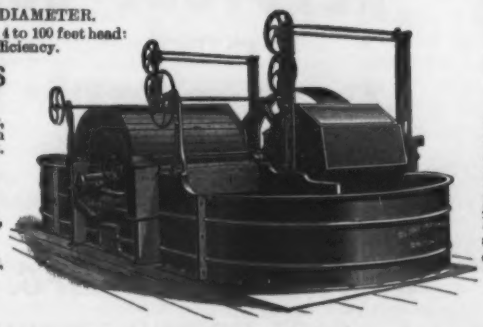

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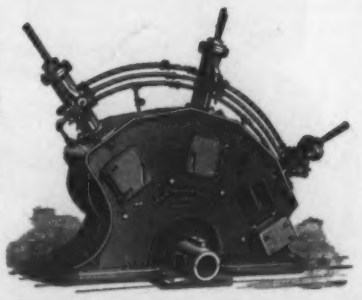

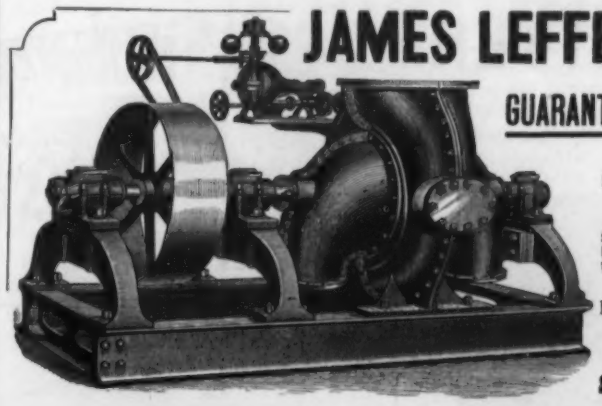

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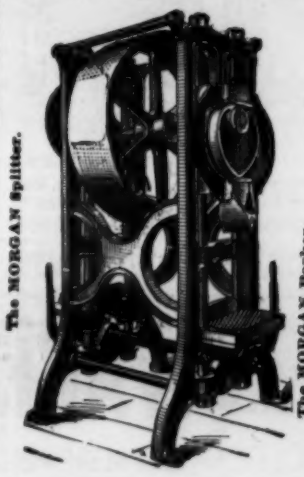

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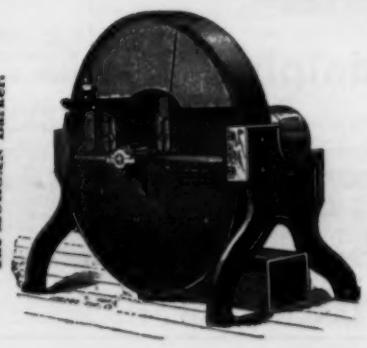

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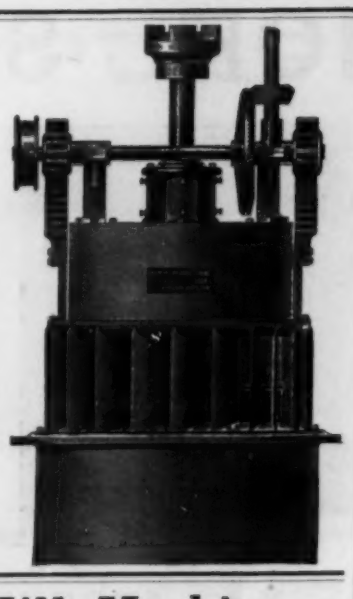

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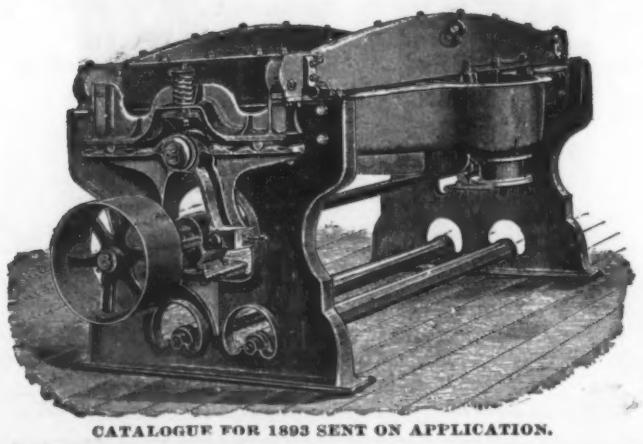

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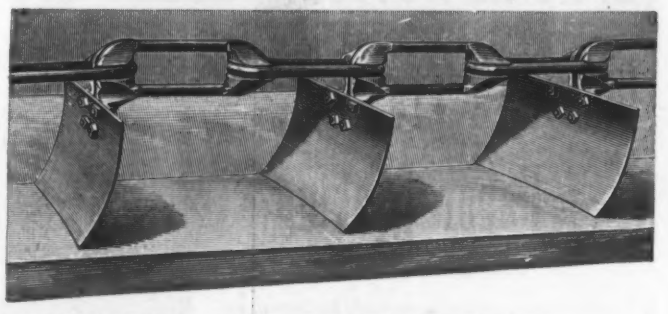

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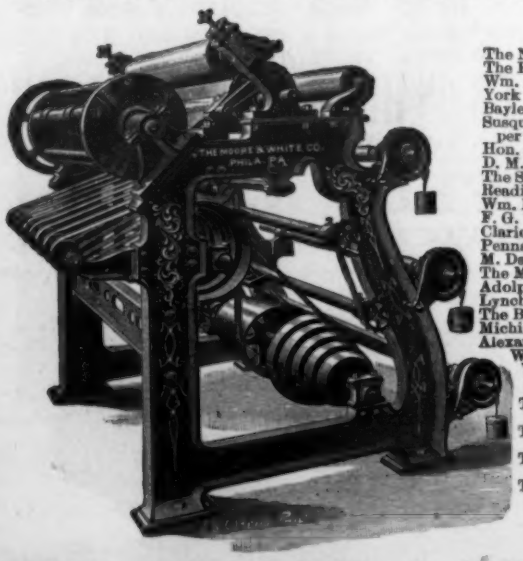

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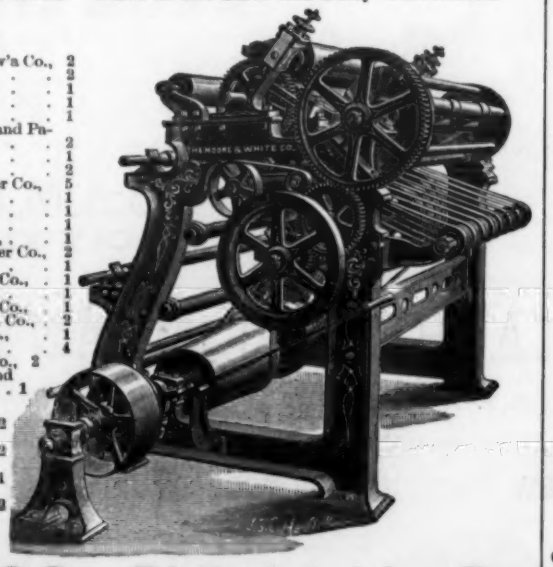

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Extracts from John's Letter.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

Mr. Editor:

In several of my previous letters, and which you saw fit to honor with space in your paper, I describe the wet part of McDougal's cylinder paper machine for making heavy manilla papers and it would hardly be complete without a few remarks upon the drive of the machine. The paper machine proper, when placed in position, sat upon 12x12 inch iron sills, whose top surface line projected 1 inch above the machine room floor, which in turn rested upon two brick foundation walls, the floor being elevated to such a height as to leave a well lighted basement under it. The machine room floor was supported by 10x10 timbers reaching from the rear foundation wall of the paper machine to the rear wall of the building, into which the timbers were firmly anchored at each of their ends. These timbers were placed about 4 feet apart and took the place of joists, as none of the latter were used in the construction of the paper machine room floor. In placing these 10x10 inch timbers care was taken to locate them accurately, so that it would not be found necessary to cut or move any of them after they were once placed in position; but each was placed in such a place that belts passing through the floor would miss them and that they would come directly under the feet of the various floor stands, so that the lag screws which held these down would screw into them. This could be and was easily done to a nicety, the measurements for the location of the timbers being given on a drawing furnished by the machine builder.

* * *

Now, after the beforementioned timbers were set in position, a 3 inch floor was placed on top of them, and then a 1 inch floor on top of the whole, the latter running at an angle with the former. The floor in the rear of the paper machine—that is, the drive side—was so arranged that the end nearest the rear wall, opposite the front side of the paper machine, was elevated about 1 inch above the top level of the machine sill, while the side of the floor nearest to the machine foundation sill was 1 inch lower than the top surface line of the machine foundation sill. This was for the purpose of running the water (which sometimes floods the floor, as in washing up) by gravitation toward the sill of the paper machine, where it was received into a neat little gutter placed alongside of the sill for this purpose, and by it conveyed to the outside of the building. The floor underneath the wet part and between the foundation sills was constructed with a similar end in view; that is, the two sides nearest the machine sills were elevated about 1 inch higher than was the centre of the same; so also was the vat end, and the end nearest the dryer part was elevated with the centre depressed, all for the purpose of conducting the water from the sills and from the front and rear ends of the wet part of the machine into a drain pipe, which conducted the waste to its proper destination.

* * *

I suppose that there is not a paper mill superintendent in this land who has not got his own little pet hobby notions about foundations, and how they should or should not be built, and of what materials they ought to be composed, and so it happens that we have got all kinds and varieties of machine foundations, good, bad and indifferent, and it is truly amusing to reflect on the various ideas and practices sometimes employed. Why, here is A who has a fair paper machine, but a rotten foundation, composed of a 10x10 wood sill running lengthwise, resting on a few stone piers, and these set in a wet soil—the next thing to a swamp. Here is B with a splendid paper machine, which I suppose will weigh about 100 tons, and he has it set in the second story, resting on wooden props. I wonder if paper makers who have machines similarly located take a good share of the blame to themselves when they get angry, because their paper machine under such circumstances will sometimes settle or get out of line, instead of heaping all of the blame upon the head of some machine builder. To do this would "let the cat out of the bag," and as a consequence proprietors might raise the "Old Harry," and make the very air blue with vibrations, because the superintendent didn't do a better job himself when the aforesaid foundation was built.

* * *

In constructing the foundation for McDougal's paper machine an arched wall of brick was built about 18 inches wide, and on top of this wall, bedded in cement, and anchored to it by anchor bolts, located about 4 feet apart, were iron sills about 1 inch in thickness; upon these iron sills every foot of the paper machine framework rested, while the remainder of the feet rested on the before described wood floor. I perfectly agree with this method for a paper machine foundation, and in setting the machine thereon, with this small difference, that the screens should have a thin cushion of wood between the iron frame of the same and the iron machine sill. I suppose that you will ask, why this? In answer I reply to deaden the vibration and noise. Right here I recall an instance similar to this, although in another line, which came under my own observation and which I repeat for your benefit, at the same time using this instance as an illustration to convey an idea of the results to be obtained by following this suggestion. C bought a heavy planer and matcher, built a strong stone foundation to support it, set the machine on iron sills and started. Somehow no satisfactory results could be obtained, as vibrations showed themselves plainly on the products which the machine turned out, and so much so that the machine was finally torn apart and rebuilt, thinking that this would remedy the evil. However, when again set in motion the same results as before were obtained, and C was at a loss to know what to do to remedy the evil. Finally one of the men suggested that a wood cushion be placed between the feet of the machine and the iron foundation sill, which was done with success, the vibration marks ceasing to show themselves upon the finished product. Now, if this wood cushion plainly proves its merit on a machine which is so sensitive, what possible objection could there be to putting it into actual practice on the Gould and other screens for the purposes already mentioned?

* * *

Of all the various kinds of drives for the several varieties of paper machines those for making heavy manilla papers and board require more care and attention at the hands of the paper machine designer and purchaser than any other. To the first because he must deal with rolls moving slowly and requiring very much power to drive them, besides giving the machine a range of continued speeds of about nine to one, from the highest to the lowest speeds. These distinctive features of this class of machines require close attention and good planning to get every possible advantage. It will be found in many of these machines of necessity and advantage to drive the press rolls and calenders with over set gears, that is to place a large gear on the end of these rolls, and gear into it with a small pinion besides the usual bevel gears and taper cone pulleys, for the purpose of keeping up the speed of the bevel gear countershaft, so that the belt which drives the same will be better able to pull the load when running on some of the slower speeds, which it becomes necessary to do on this kind of work. This also requires that shafts such as drive-in shafts for presses, dryers and calenders shall be of a large diameter to keep from springing and twisting off.

Many mill men think that a shaft must be larger when running fast than when running slow to do a given amount of work. This is quite a mistake. As an illustration I recall an instance where a paper machine had run on news for about ten years, when it was altered into a cylinder paper machine for running on heavy board. Now the drive-in shafts for the various parts were left as they were, because the parties did not want to throw them away, notwithstanding the fact that they were fairly warned that they were too light for the work they were to be called on to perform; but as they had been run there ten years on news, the mill owners couldn't see it any other way than that they should be strong enough to stand the slow running required by working on board. Accordingly the same drive-in shafts were retained and used in the make up of the board machine. All went well until the machine was set in motion to drive these self-same stacks, now working on board, when the drive-in shaft on the calender stack twisted off after being used less than two days. Thinking that the shaft might possibly have had a flaw, a new one of the same size was supplied, which met a similar fate after driving the stack for about two weeks.

The small taper cone pulleys should also be of large diameter, as well as the large ones which constitute the speed changer of the paper machine. In fact everything about a slow running board machine or one for making heavy manilla paper should be made with a view to requiring and conveying about twice as much power as the average news machine, and cylinder machine purchasers should see to it that these points are kept well in view and carried out to the letter in machines which they purchase.

* * *

The line and other shafting necessary to drive a paper machine is frequently placed in positions which are decidedly disadvantageous to the driving of a paper machine, and many men seem to think that any kind of buildings are good enough, while another class of people, when getting ready to start in the paper business, think that the first requisite is to hustle off to a home architect, who perhaps never saw the inside of a paper mill, and knows about as much of the necessary construction of these peculiar plants as does a farmer about making paper. I do not wish to branch out into paper mill architecture in this letter, but will reserve that broad subject for a special communication some time in the future; but I was about to say that many mill men seem to think that any building will do to put the paper machine in, and that the size of the machine room is not so particular, and so it happens that machines are frequently placed in rooms which have low ceilings, so much so that when the large taper cones are put in place the best possible position will only leave their centres a trifle over 7 feet apart, which is not enough to give a good length of belt for pulling purposes, and again it will be frequently found that the ready made rooms in which paper machines are placed are too narrow as a rule, that is there is not enough width in them to give plenty of space in which the machine designer can locate the drive details so as to leave a convenient and safe passage for the machine tender to pass to and fro in taking care of the paper machine drive.

The results of thus crowding a paper machine drive into a room which is too narrow are simply unavoidably short shafts, short bearings, short belts, narrow faced pulleys, small gears, small pulleys, a squeeze here and a squeeze there, and while this countershaft ought to deploy toward the cutter end in order to leave a passage it is made to deploy toward the vat or Fourdrinier end of the machine, while a large bevel gear is made to overhang its bearings and another is made to turn inward, and thus becomes a dangerous menace to life as long as the machine runs in this way. Sometimes it is found that the best possible position for the large taper speed cones will only leave them a little over 7 feet between centres

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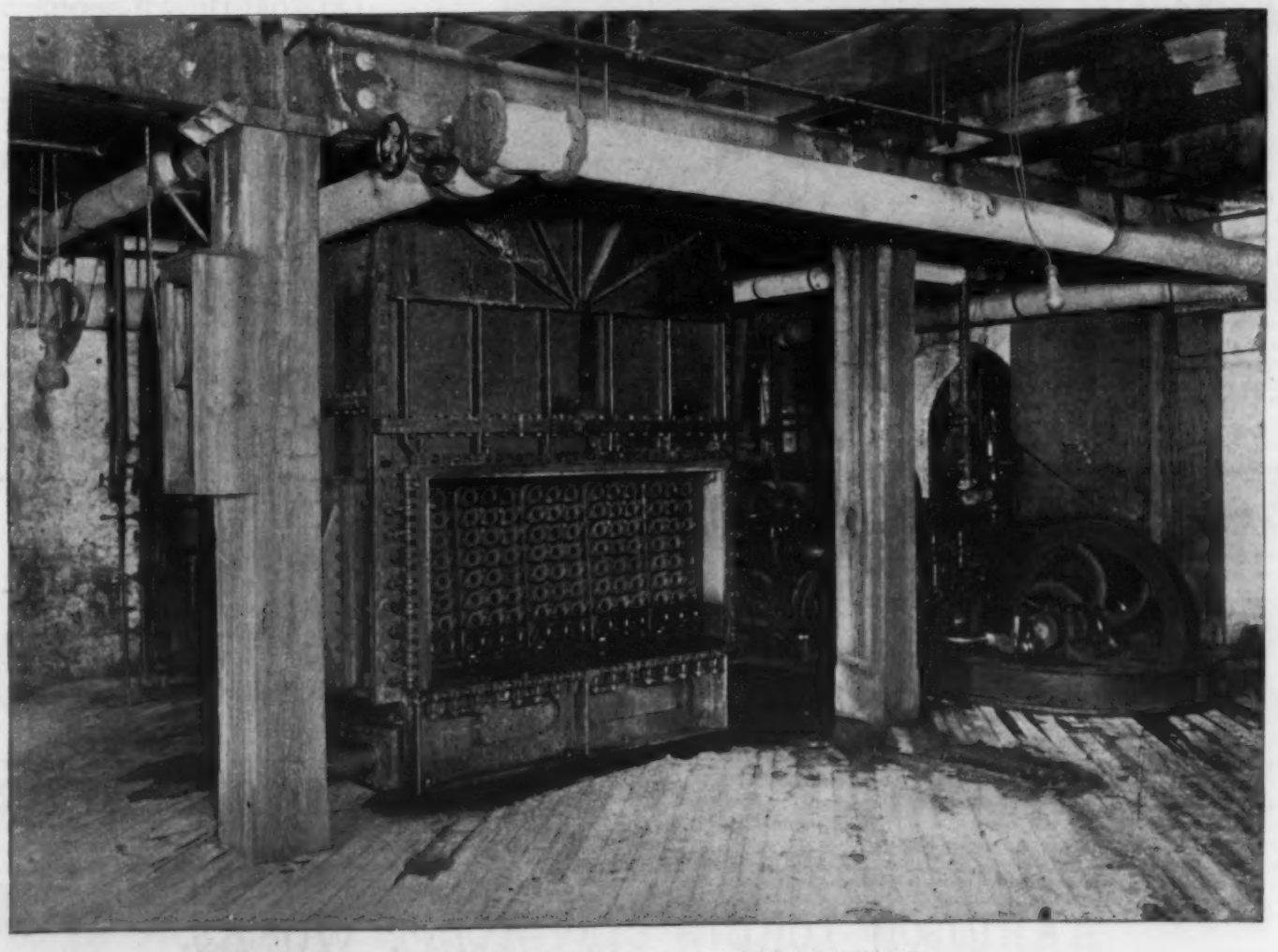

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and in order to get even this distance they must be put in a position where they cut off the through passageway behind the machine, all of which sometimes makes a paper machine designer produce a job which his better judgment tells him could be improved upon if the room was only wider; but the mill man has got the room and is now buying a paper machine to fit it.

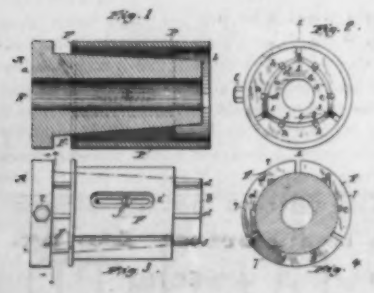
If the machine builder complains to the machine buyer about the room, the latter politely suggests that if he cannot get his machine into that room his competitor can, and the result is that the machine builder silently but reluctantly goes ahead and squeezes his machine with its drive into the machine room, well knowing that his machine will fit into any space that his competitor's will; and so it happens that machine rooms get crowded and inconvenient, and machine buyers who act as described never know how comfortable they might have made themselves and others by proceeding in the right way at the right time.

* * *

The drive part of McDougal's paper machine, that is, the engine and large step and taper cones, together with the line shaft, were placed in the basement under the paper machine room, and belts were passed through the floor to the bevel gear countershafts; the line and other shafts in this basement were supported on floor stands which were set upon stone piers firmly anchored in the earth; all of which made an excellent job. The agitators and stuff pumps, together with the fan pump drive, were likewise placed in the basement. This is a very good method and makes a first-class job; it is being adopted by leading mill men and embodied in the construction of new mills going up, and it is well worth imitation by all. JOHN.

Holder for Cores of Paper Rolls.

An illustration is given of an improvement in holders for the cores of paper rolls, and especially for the paper cores now



HOLDER FOR CORES OF PAPER ROLLS.

coming into use as substitutes for the iron cores formerly employed.

It is the purpose of this invention to furnish a holder which can be very easily applied, will hold the core very firmly and can be very readily removed from the core.

It consists of two principal parts, viz., an inner sleeve or bushing which is adapted to be secured to the shaft, and a number of outer segments, preferably three, which are arranged to slide lengthwise of the inner sleeve. The surface of the sleeve is formed in such a manner that while the diameter of the sleeve increases from the inner to the outer end thereof, the radius of curvature of each surface of the sleeve on which the segments slide remains the same throughout the length of the sleeve. The purpose of this formation of the sleeve is to afford a broad and uniform support for the segments, no matter at what part of the sleeve they may be, which would be impossible if the sleeve were formed as a core with a constantly changing radius of curvature. The segments are also so shaped that their surfaces are always parallel to the axis, no matter what the position of the segments on the sleeve may be. With holders constructed in this manner the paper core is very readily and firmly secured on the supporting shaft and as readily removed therefrom.

Fig. 1 is a longitudinal section of the holder on the line 1—1 of Fig. 2 and showing a part of the paper core wedged in place on the holder; Fig. 2 is a view of the end of the holder as it appears when looking at its small end and showing the several bearing surfaces and the guides; Fig. 3 is an elevation of the holder, showing the slots in the segments; Fig. 4 is a cross section at the upper end of the holder on line 4—4, but looking toward the segments.

The sleeve A, preferably made of cast iron, is shaped in the following manner: At the larger or outer end *a* the sleeve has a truly circular shape, as shown in Fig. 4. From the outer end *a* the sleeve tapers toward the smaller end *b*, as indicated in Fig. 1, but the bearing surfaces retain always the same radius of curvature. This result is attained in the following manner: The diameter of the smaller end *b* having been decided on, points, as 1, 2, 3, which divide the circumference of the smaller end into any number of parts (preferably three equal parts), are taken as the intersections of the bearing surfaces of the sleeve A, at that end *b*, and arcs of circles, as 4, 5, 6, are drawn through these points 1, 2, 3 with the same radius as that of the circle at the large end of the sleeve. Then the surface of the sleeve (or rather, if the sleeve is of cast iron, the surface of the pattern) is worked to the lines 4, 5, 6 on a true taper from the larger to the smaller end of the sleeve. Then guides *d d*, *e e*, *f f* are fixed on the surface of the sleeve, the guides of a pair being parallel each to each.

The segments F are preferably shaped as shown of cast metal. Each segment is preferably as wide as the several arcs 4, 5, 6 at the small end of the sleeve, and the outer surfaces 7 of the segments are all arcs of the same circle, and of such radius that when the segments are at the large end of the sleeve their surfaces 7 coincide with a cylinder which has the same axis as the sleeve A. The inner surface of each segment F tapers on the same slope as that of the bearing surfaces of the sleeve, as shown in Fig. 1, so that the surface 7 remains parallel to the axis in all positions; also the curvature of the inner surface of the segments is the same as that of the arcs 4, 5, 6 of the sleeve. Consequently the segments bear truly throughout their extent on the sleeve. The segments are each provided with parallel grooves *h h*, to fit the guides *d d*, and in each of the segments is a chamfered slot *i*, which slides by a flat headed screw *j*, the head of the screw bearing on the flanges of the chamfered slot, as seen in Figs. 1 and 2.

In operation two of the holders are preferably used, one being fixed by the set screw *l* on the usual shaft, which passes through a hole, but is not shown in the drawings. The core of the paper roll, P, indicated by hatched lines, is slipped over the fixed holder. Then the other and similar holder is brought to such a position on the shaft that the holder enters well into the other end of the paper core, and the sleeve is driven sharply into the paper core, thus wedging the sliding segments tightly into the core at both ends. Then the sleeve is fixed on the shaft by the set screw *l*.

To increase the grip of the segments on the paper core, their outer surfaces may be provided with ribs or corrugations, and it will be understood that the arcs 4, 5, 6, of the sleeve are preferably formed as circular arcs, other shapes may be selected, the essential element of the invention being that the radius of curvature of the several bearing surfaces of the sleeve A shall be the same for all parts of the length of the sleeve, notwithstanding the change in the diameter of the sleeve. It will also be apparent that the small end of the sleeve can be made circular, and the large end shaped on the eccentric arcs.

Some Good Cements.

A cement of specially valuable properties for steam pipes in filling up small leaks, such as a blowhole in a casting, without the necessity of removing the injured piece, has been compounded. The cement in question is composed of 5 pounds of Paris white, 5 pounds yellow ochre, 10 pounds litharge, 5 pounds red lead and 4 pounds black oxide manganese—these various materials being mixed with great thoroughness, a small quantity of asbestos and boiled oil being afterward added. The composition, as thus prepared, will set hard in from two to five hours, and possess the advantage of not being subject to expansion and contraction to such an extent as to cause leakage afterward, and its efficiency in places difficult of access is of special importance. The following cements are given by the *Tradesman* for joining leather to iron, steel or glass: 1. Glue, 1 quart dissolved in cider vinegar; add Venice turpentine 1 ounce; boil slowly or simmer twelve hours. 2. Equal parts glue and isinglass; soak for a few hours (ten or twelve) in cold water, then add tannin until the mixture becomes "ropy;" remove the surface of leather before putting on the cement, and apply it warm. 3. Steep the surface of the leather in an infusion of nut gall, then spread a layer of hot glue on surface of metal (which should be warm), and apply flesh side of leather under pressure until dry. 4. Wash the metal with hot gelatine, steep leather in nut galls as above, and apply in the manner directed.

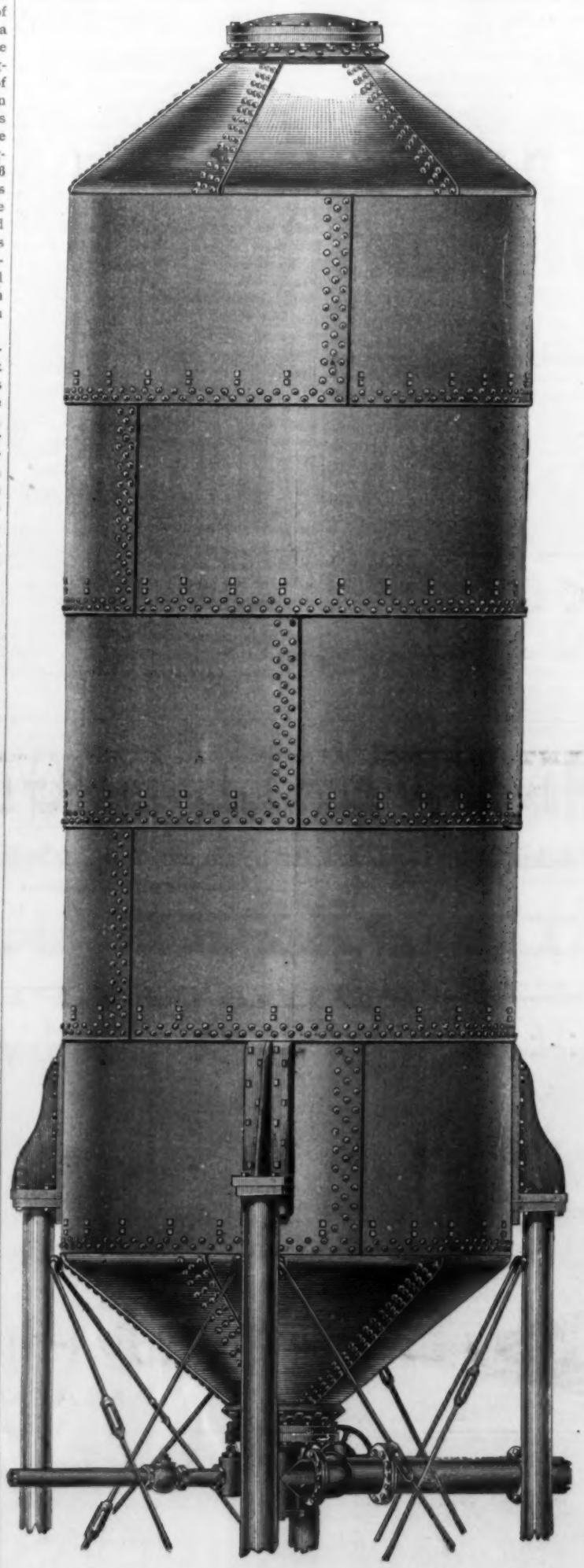
Postal Savings Banks.

The British post office savings banks, which were instituted several years ago, showed last year a decided increase in the number of deposits and the amount deposited, the former increasing from 8,941,431 to 9,478,339, and the latter from £21,334,903 to £22,845,031, the total sum remaining (after withdrawals) to the credit of depositors at the end of the year being £75,853,079, an increase of more than £4,000,000 sterling over the total at the end of the preceding year. No less than 3,300 penny banks were opened in connection with the post office savings banks in the United Kingdom between September, 1891, and December 31, 1892—a period of sixteen months. As to the penny banks and stamp deposit schemes, the Postmaster General's report says:

"As an alternative to the penny bank books, which have for a long time been supplied to the managers of the penny banks gratuitously for the use of their depositors, the department now offers cards of a special pattern, and there promises to be a considerable demand for such cards, upward of 30,000 having been applied for in a little more than two months. * * * Among many letters which have been received from school managers and others acknowledging the aid rendered by the department, one may be mentioned from the clerk of the school board in an important town in Wales, where the stamp deposit system is in operation, containing the remarkable statement that the sum of £1,000 had been saved by the scholars the past year. * * * To meet the call of schools situated in remote districts arrangements have been made for the deposits to be forwarded to the nearest post office savings bank by means of a system of free registered letters, for which special envelopes are provided by the department.

"Judging from the regular flow of renewed applications for supplies for the stamp forms the scheme seems to be thoroughly established, and it is obvious that it must be a great advantage thus to familiarize children with the facilities for thrift offered by the Government."

These various saving schemes have been recommended for use in this country, but no serious attention has yet been given to the matter by Congress.



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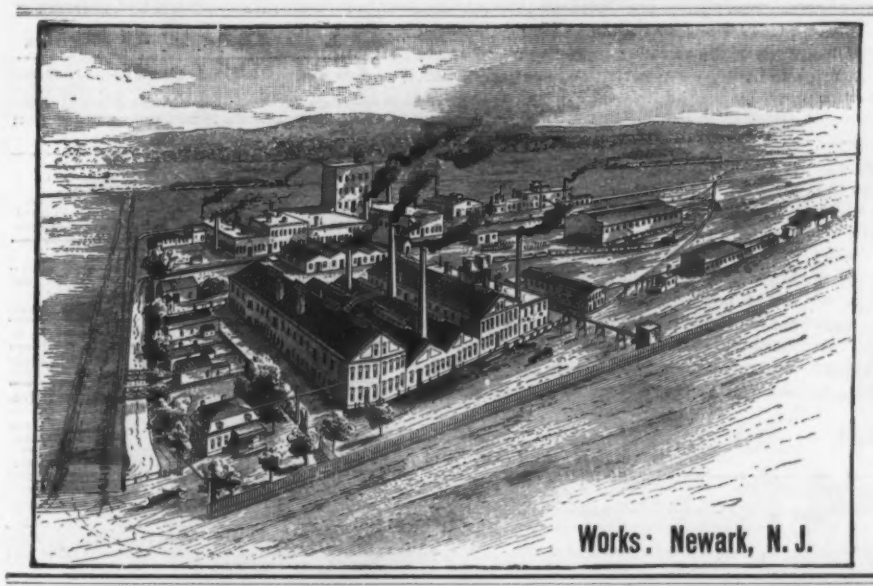

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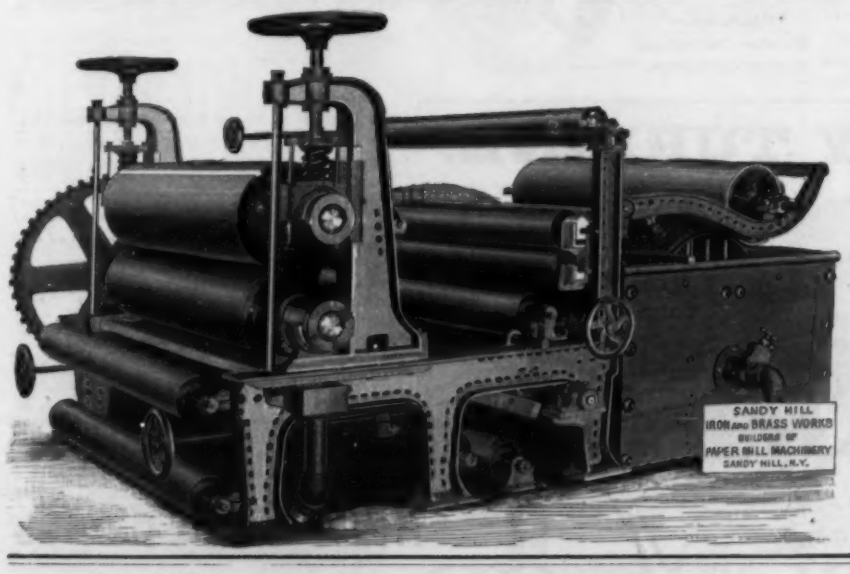

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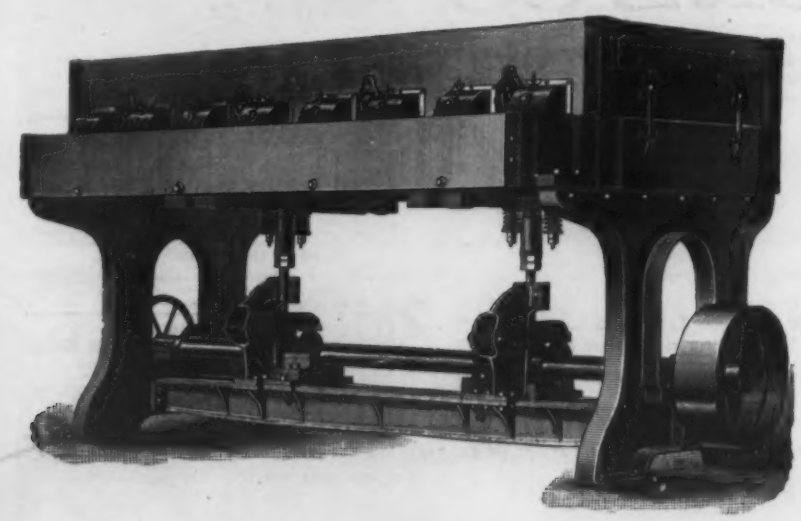

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Electrolytic Cell.

This invention relates to electrolytic apparatus adapted for the commercial exploitation of the process of electrolysis of salts, especially the chlorides, such as chloride of sodium; and the object of the invention is particularly to make a durable, economical and effective apparatus in which the operation can be carried on continuously.

To this end it consists in an improved construction and arrangement of an electrolytic cell, and in the combination of several cells to form a large plant adapted to meet various contingencies when in operation.

Figure 1 is a diagram plan view of an electrolytic plant composed of four cells and embodying the improvements. Fig. 2 is a longitudinal, central, cross section of one of the cells shown in Fig. 1; Fig. 3 is a cross section on line *x x* in Fig. 1; Fig. 4 is an enlarged, vertical, section through one of the anodes, and Fig. 5 is a section showing some details of construction.

The apparatus is shown as comprising four cells, each of which is constructed as follows: A is a large iron tank preferably of boiler iron and supported upon cross bars B by hangers C from suitable overhead beams D. The tank is electrically insulated in any suitable manner, such as by passing the hangers C through insulating bushings *a* in the beams. The tank is divided by a diaphragm into an anode compartment, E, occupying the upper portion of the tank and a cathode compartment, F, occupying the space in the tank below the diaphragm. The diaphragm forms a complete vessel, and consists of porous material G, which constitutes the diaphragm proper, and of a vessel shaped frame or screen, through which the liquid can pass, but which is adapted to hold the material of which the diaphragm is made. The frame can be made of open work in any manner to form a screen, but iron wire screen H, supported at intervals by iron cross bars H', which are secured to and electrically connected with the edges of the tank by bolts or rivets *b*, is preferably used. As shown more particularly in section in Fig. 5 the bars H' are flattened at the ends, and washers *c* are placed upon the bolts to hold the edges of the screen away from the edges of the tank, and thus form an opening *d* for the escape of the gas from the cathode compartment. The diaphragm proper is made of asbestus, in the form of asbestus sheet placed on the inside of the supporting frame in several thicknesses, and with the joints broken so as to form an even and unbroken lining. The frame and lining thus form an inner porous anode vessel in the tank, and a particular feature is that the frame has outwardly inclined sides and a sloping bottom. The opening *d* may be left open for the escape of the gas, or it may be covered and pipes placed in the cover if it is desired to collect the gas for use. The anode compartment is closed on top by a cover J, which is provided with openings in which the anodes K are secured and project into the compartment below. These anodes are formed of gas carbon inclosed in tubular supports L of earthenware open at the bottom and with a wire connection leading into the top.

As shown in detail in Fig. 4 a solid piece of gas carbon, *e*, to which is cast a metallic head, *f*, of lead or other suitable material, is taken. The gas carbon *e* projects into the support L, and powdered carbon *e'* is packed around it, while the upper end is hermetically sealed into the top of the support by plaster of paris, *g*, or other cement placed around it, and the wire terminal is soldered into the lead *f*. The gaseous products of decomposition from the anode compartment escape through specially provided exit pipes M, which lead from the cover over the sides of the tank into mains M', which pass underneath the cells and receive the individual pipes from the anode compartments of every cell, and carry the gas to an exhaust fan, M^2. In this manner air is drawn into the anode compartments through the cracks or leaks around the cover and other places which may not be closed quite air tight, and this inward suction prevents the escape of any gas from the anode compartments, and thus the decomposition of chlorides of sodium may be carried on without there being even a trace of the noxious chlorine gas in the surrounding air. The tabular supports of the anode project to near the bottom of the anode compartment, which is covered with a layer of broken pieces of gas carbon N distributed over the whole surface of the diaphragm. At the extreme edges a row of brick or large chunks of gas carbon N' is laid upon the diaphragm for the purpose of preventing the edges of the diaphragm from being accidentally disturbed. The carbon on the bottom of the anode compartment forms the anode by being in contact with the carbon in the tubes L, holding the lower ends of the tubes in place against accidental displacement, and tending to exclude the gaseous products of decomposition from entering the tubes. This preserves the mechanical continuity of the anode, which might in time become destroyed by the corrosive action of chlorine, and as a further safeguard there are perforations *h* in the tubular supports L above the line of the liquid, whereby any gas formed in the tubes can escape into the anode compartment without danger of forcing its way to the top and corroding the metallic conductor.

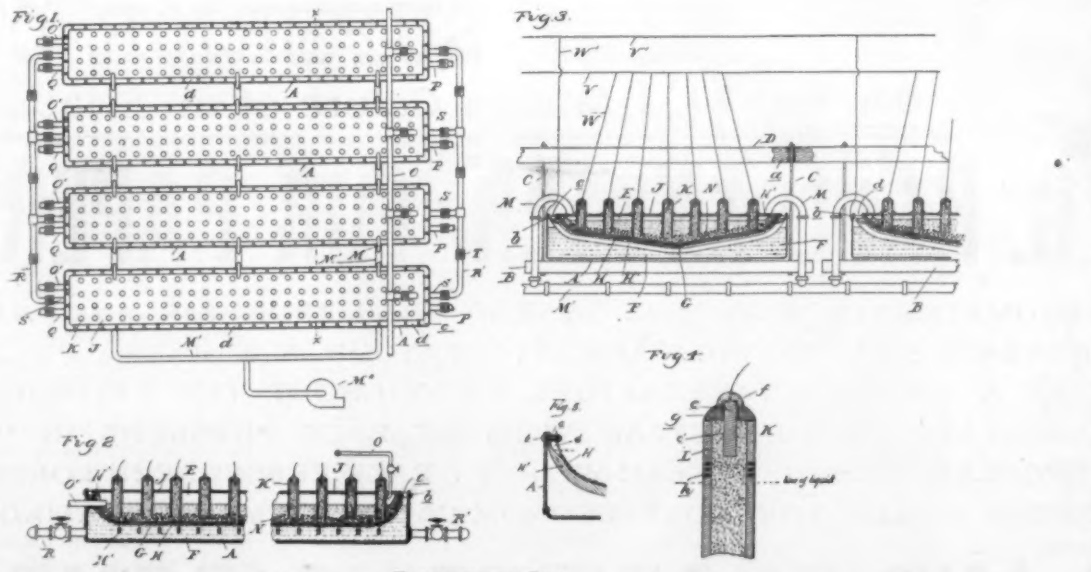
The anode compartment of each tank is provided with a valve, controled supply pipe, O, and an overflow pipe, O', placed at opposite ends of the compartment.

In using this apparatus for the electrolysis of common salt a constant supply of fresh brine is preferably allowed to flow into the anode compartment, and thus a saturated solution is constantly maintained therein, while the overflow pipe maintains the liquid at a fixed height in the compartment and produces a flow of the liquid through the tank. The advantage of having a constant feed is that most of the chlorine gas is thereby carried off in solution, and the quantity of the product in the cathode compartment is naturally increased by maintaining the liquid in the anode compartment at its full strength. The overflow from the anode compartment may be freed from the chlorine gas, and, if required, saturated with fresh salt, and then used again.

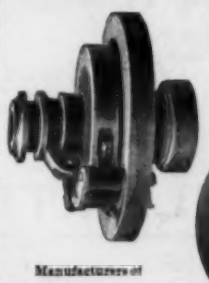
The cathode compartment of the cell is provided with a valve-controled feed pipe, P, through which pure water or a solution of the liquid flows into the compartment in sufficient quantity to discharge the product by displacement through a discharge pipe, Q. In case of several cells being connected the cathode compartment of the first cell need only be provided with a feed pipe, P, and that of the last cell only with a discharge pipe, Q, and the product is carried from one cathode compartment into the next by means of suitable communicating pipes, preferably arranged in the manner shown, and wherein R R' are main communicating pipes arranged at both ends of the tanks, and communicating with each cathode compartment through valved branches S, valves T being placed in the main pipes between each two tanks. To prevent short circuiting, the pipes R R' are partly made of sections of tubing of rubber or other insulating material. With this construction it will be seen that by a proper manipulation of the different valves, the cathode compartments may be connected for the flow of the liquid in series through the compartment, while at the same time in case of needed repairs or for any other reason one or more of the tanks may be cut out without interfering with the working of the others in combination. The main leads V V', through which the current is furnished, are preferably arranged overhead with feeders, W W', leading from them to the anodes and to the cathodes, the latter of which are represented by the metallic support of the diaphragm and by the metallic tank to which the feeders may be connected.

An important feature of the invention is the frame which supports the diaphragm proper. It has the form of a vessel without any vertical walls. The object is to hold the lining of asbestus in position by making the walls at a suitable inclination, and the apparatus comprises a porous vessel or diaphragm entirely of incompact material, of granular pulpous or fibrous condition, such as sand, cotton, pulpous or fibrous asbestus or material which is transformed into this condition when used in a liquid, such as asbestus sheet, which becomes pulpous when used as a diaphragm. Heretofore the porous vessel was usually either entirely formed of a solid material, such as the porous earthenware vessels, or of incompact material filled in between solid supports or forming only a portion of the walls of the vessel. Considering that the incompact materials spoken of are generally preferable as diaphragms to the use of compact or solid diaphragms, on account of their having less electrical resistance, the advantage of this construction is obvious. It not only gets the benefit of having the incompact material from the entire walls of the vessel, but as the material itself forms the inner walls of the vessel or diaphragm the anode can be placed directly in contact therewith, and by making the supporting frame the cathode, a cell in which the anode and cathode are co-extensive with the diaphragm and are only separated from each other by the incompact material, is formed, and thus the electrical resistance is decreased to a minimum.

By using vessels of small height with large area the diaphragm and the electrodes are of large area in proportion to the contents of the vessels, and thus a large output is obtained. The walls of the frame may be arranged at any suitable incline—either straight or curved; by curving them, however, interior corners are avoided. The bottom may be flat, but it preferably slopes toward the middle, so as to make the inclines less abrupt, and prevent the gas from collecting on the under side. The layer of broken pieces of gas carbon firmly hold the material which forms the diaphragm in position against the screen, and it also forms an inner compartment for the liquid, which is in contact with it throughout. The screen may be suitably fine mesh to hold the material of the diaphragm from passing through it, but a coarser screen covered with some fabric, such as one or more sheets of cotton, is preferred.



ELECTROLYTIC CELL.



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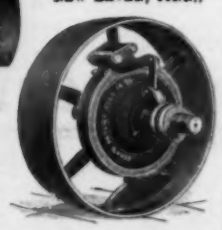

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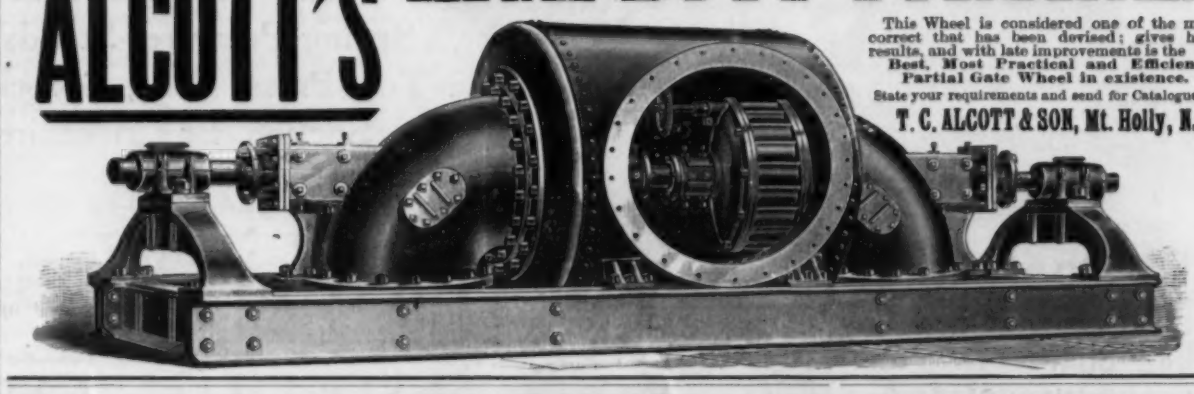

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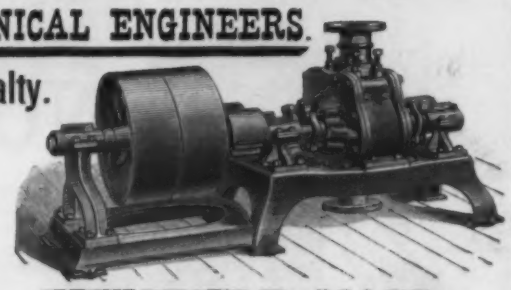

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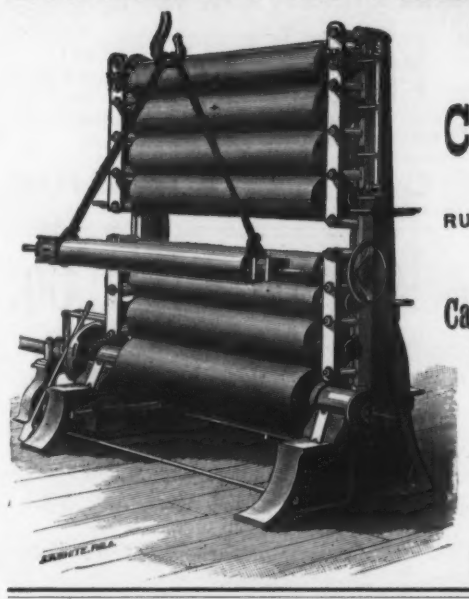

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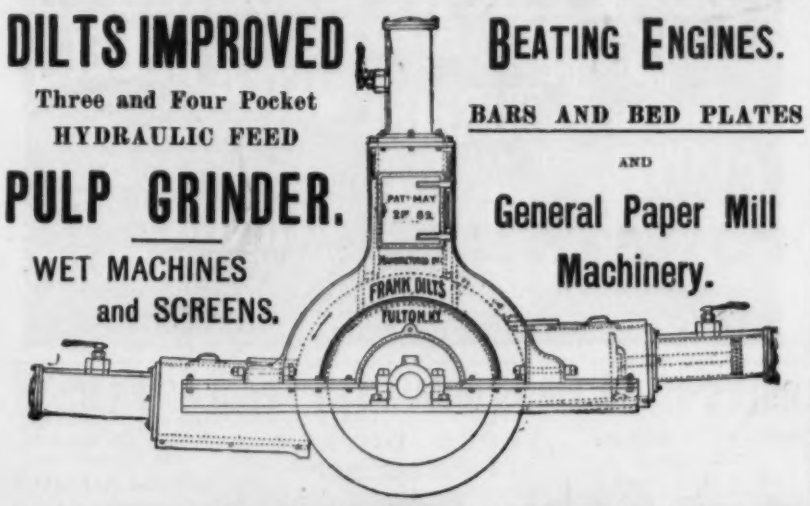

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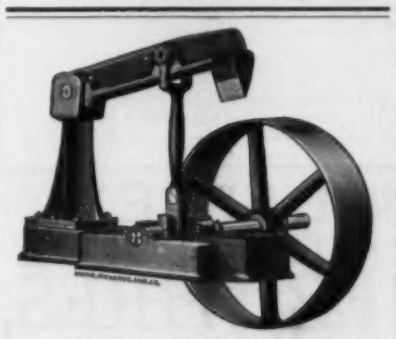

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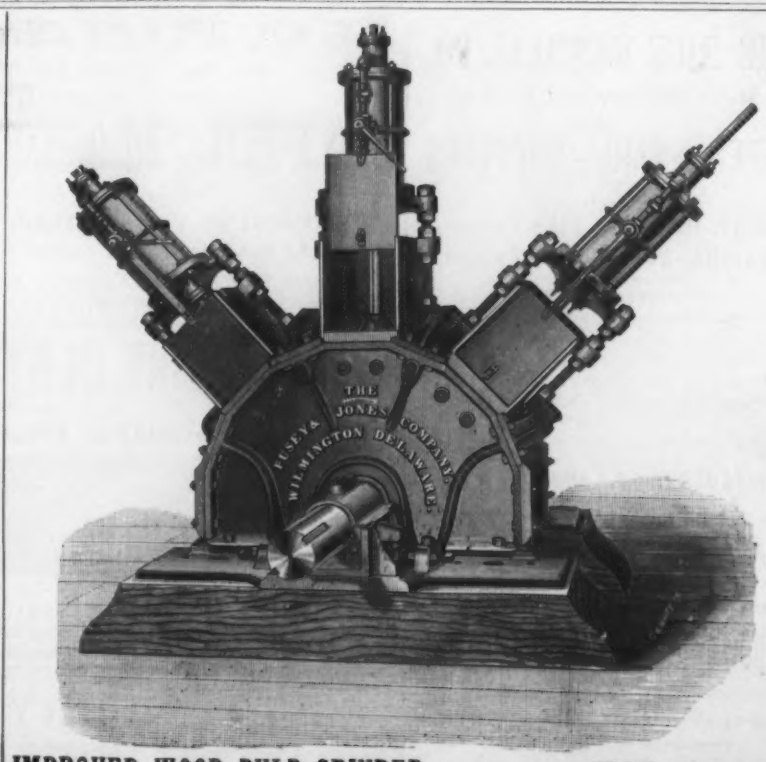

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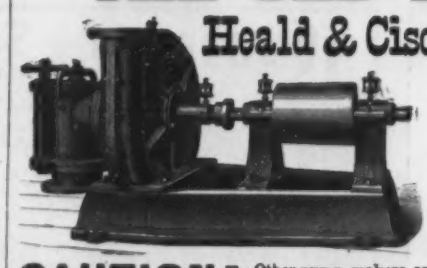

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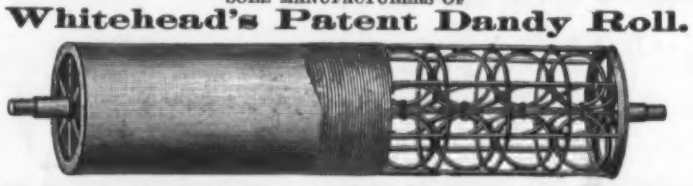

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